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Nos. 82-81 and 82-236

In the Supreme Court of the United States

OCTOBER TERM, 1982

AMERICAN PAPER INSTITUTE, INC.

v.

AMERICAN ELECTRIC POWER SERVICE CORP., *et al.*

FEDERAL ENERGY REGULATORY COMMISSION

v.

AMERICAN ELECTRIC POWER SERVICE CORP., *et al.*

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

JOINT APPENDIX

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Petitions For Certiorari filed July 9, 1982 and August 9, 1982
Petitions For Certiorari granted October 12, 1982

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LIST OF RELEVANT DOCKET ENTRIES IN THE COURT OF APPEALS

1. Petition of American Electric Power Service Corp., Consolidated Edison Company of New York, Inc., and Colorado Ute Electric Association, Inc., for review of Federal Energy Regulatory Commission Order Nos. 69 and 70. Filed July 14, 1980.
2. Order granting motions of American Paper Institute, Inc., Elizabethtown Gas Company and Brooklyn Union Gas Company, for leave to interevene. Entered August 21, 1980. This order is reproduced herein at 2.
3. Order granting motion of Occidential Geothermal, Inc. to intervene out of time. Entered March 25, 1981. This order is reproduced herein at 3.
4. Opinion of the Court of Appeals. Filed January 22, 1982. The opinion is reproduced in the Petitioner's Appendix at B-1 to B-134.
5. Judgment of the Court of Appeals. Filed January 22, 1982. The judgment is reproduced in the Petitioner's Appendix at B-200 to B-201.
6. Order and Memorandum of the Court of Appeals denying petitions for rehearing. Filed April 9, 1982. The order and memorandum is reproduced in the Petitioner's Appendix at B-202 to B-204.
7. Order of the Court of Appeals denying suggestions for rehearing *en banc*, and Memorandum of dissenting judges. Filed April 9, 1982. The order and memorandum is reproduced in the Appendix at B-205 to B-208.

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT
SEPTEMBER TERM, 1979

No. 80-1789

Filed: August 21, 1980

AMERICAN ELECTRIC POWER SERVICE CORPORATION, ET AL., PETITIONERS

v.

FEDERAL ENERGY REGULATORY COMMISSION, RESPONDENT

AND CONSOLIDATED CASE NO. 80-1531

ORDER

On consideration of the motions of (1) Elizabethtown Gas Company (2) The American Paper Institute, Inc. ("API") and (3) The Brooklyn Union Gas Company ("Movant") for leave to intervene in No. 80–1789, it is

ORDERED that the aforesaid motions for leave to intervene are granted.

Counsel for the aforesaid intervenors may participate in oral argument only to the extent allowable under Rule 12 of the General Rules of this Court.

In order to provide for maximum utilization of the provisions of Rule 28(i) of the Federal Rules of Appellate Procedure, the time for filing the brief(s) of the intervenors is extended until fifteen (15) days after the briefs are filed by the principal party whose position they support. For the purposes of Rule 31(a), the time for filing the next brief will run from that date.

For the Court

GEORGE A. FISHER, CLERK

By: /S/ DANIEL M. CATHEY
First Deputy Clerk

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT
SEPTEMBER TERM, 1980

No. 80-1789

Filed: March 25, 1981

AMERICAN ELECTRIC POWER SERVICE CORPORATION, ET AL., PETITIONERS

v.

FEDERAL ENERGY REGULATORY COMMISSION, RESPONDENT

ELIZABETHTOWN GAS COMPANY, AMERICAN PAPER INSTITUTE, INC. BROOKLYN UNION GAS CO., INTERVENORS

ORDER

The Clerk is directed to file the motion of Occidental Geothermal, Inc., to intervene out of time, on consideration thereof, and it appearing that the motion is unopposed and that the movant will comply with the briefing schedule set in this case, it is

ORDERED that the aforesaid motion for leave to intervene is granted.

Counsel for the aforesaid intervenor may participate in oral argument only to the extent allowable under Rule 12 of the General Rules of this Court.

For The Court

GEORGE A. FISHER, CLERK

By: /S/ DANIEL M. CATHEY
First Deputy Clerk

LIST OF RELEVANT DOCKET ENTRIES AT THE FEDERAL ENERGY REGULATORY COMMISSION (FERC Docket No. RM 79-55)

Date

1979

June 26 — Staff Paper (44 F.R. 38863), discussing Commission Responsibilities to establish rules regarding rates and exemptions for qualifying cogeneration and small power production facilities pursuant to Section 210 of the Public Utility Regulatory Policies Act of 1978.

July 23 — Notice of Regional Hearings (44 F.R. 44177):

7/23/79—Room 5048, California State Building
350 McAllister Street
San Francisco, California

7/27/79—(Room to be designated)
Everett McKinley Dirksen, Building
219 South Dearborn
Chicago, Illinois

7/30/79—Federal Energy Regulatory Commission,
Hearing Room A
825 North Capitol Street
Washington, D.C. 20426

8/1/79—Comments Due

Sept. 28 — Notice (44 F.R. 57107), setting public hearing to be held on the following dates in the designated cities:

10/17/79—New Orleans, Louisiana
10/24/79—Washington, D.C.
10/26/79—Boston, Massachusetts
10/17/79—Requests to participate to be filed

Oct. 18 — Notice of Proposed Rulemaking (44 F.R. 61190) issued regarding the implementation of Section 210 of the Public Utility Regulatory Policies Act of 1978.

Oct. 23 — Notice issued (44 F.R. 61977), setting public hearings to be held on the following dates in the designated cities:

11/19/79—Seattle, Washington,
11/28/79—New York, New York
11/30/79—Denver, Colorado
12/3/79—Washington, D.C.
11/15/79—Requests to participate

1980

Jan. 30 — Notice issued (45 F.R. 7819), of meeting with State Regulatory Commissioners on Staff Draft of The Final Rule.

2/4/80—Meeting from 2:00 to 5:00 p.m. in Room 9306, 825 North Capitol Street

Feb. 5 Notice issued (45 F.R. 8665), of meeting with Representatives of The Electric Utility Industry on Staff Draft of The Final Rule.

2/8/80—Meeting to be held from 9:00 to 12:00, in Room 2005 of FERC, 825 North Capitol Street.

Feb. 19 Order No. 69 and Final Rule issued (45 F.R. 12214), regarding the Implementation of Section 210 of the Public Utility Regulatory Policies Act.

Mar. 31 Notice (45 F.R. 23661) of Finding of No Significant impact and notice of intent to prepare environmental impact statement issued.

May 15 Order issued (45 F.R. 38958) granting in part and denying in part rehearing of Order Nos. 69 and 70, and amending regulations.

May 29 Notice issued (45 F.R. 38040) setting conference as listed below concerning state implementation of small power production and cogeneration facilities:

6/17/80—Ramada Inn Airport at 8:30 a.m. to 5:30 p.m. Logan International Airport

6/20/80—Ramada Inn Airport at 8:30 a.m. to 5:30 p.m. Atlanta, Georgia

6/23/80—Holiday Inn Airport at 8:30 a.m. to 5:30 p.m. Boise, Idaho

6/25/80—Rodeway Inn (at Airport) at 8:30 a.m. to 5:30 p.m. Minneapolis/St. Paul, Minnesota

6/27/80—Holiday Inn Airport at 8:30 a.m. to 5:30 p.m. St. Louis, Missouri

FEDERAL REGISTER, Vol. 44, No. 129
Tuesday, July 3, 1979

PROPOSED RULES

[18 CFR Part 292]

[Docket No. RM79-55]

Staff Paper Discussing Commission Responsibilities To Establish Rules Regarding Rates and Exemptions for Qualifying Cogeneration and Small Power Production Facilities Pursuant to Section 210 of the Public Utility Regulatory Policies Act of 1978

Agency: Federal Energy Regulatory Commission.

ACTION: Staff paper issued, by direction of the Commission, for comment.

SUMMARY: This paper discusses the Commission's responsibilities to issue final rules pursuant to section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA) relating to the rates at which power should be exchanged between qualifying cogeneration and small power production facilities and eletric utilities and the criteria under which certain qualifying facilities should be exempt from certain State and federal regulations.

DATE: Comments are due by August 1, 1979.

ADDRESS: All comments to: Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, N.E., Washington, D.C. 20426 (Reference Docket No. RM79-55).

FOR FURTHER INFORMATION CONTACT:

Adam Wenner, Office of the General Counsel, Federal Energy Regulatory Commission, 825 North Capitol Street NE., Washington, D.C. 20426 (202) 275-0422.

Robert Cackowski, Office of Electric Power Regulation, Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, D.C. 20426 (202) 275-4779.

June 26, 1979.

Memorandum to: The Commission.

From: John B. O'Sullivan, Chief Advisory Counsel; Robert E. Cackowski, Deputy Director, OEPR.

Subject: Section 210 of the Public Utility Regulatory Policies Act of 1978, Concerning Cogeneration and Small Power Production Facilities.

This memorandum is intended to serve as a discussion paper on Section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA). The memorandum will describe this section of the law, our preliminary view as to how the law might actually work, and some problems that might develop in implementation.

Introduction

Under the Federal Power Act (FPA), sales from cogenerators and small power producers to a public utility (as defined in Part II of the FPA) would, so long as the electricity might make its way into the bulk power transmission grid, make the cogenerator or small power producer itself a public utility. In other words, by virtue of its sale for resale in interstate commerce, the cogenerator or small power producer would itself become a public utility under Part II of the Power Act. Prior to the enactment of PURPA, the FERC was not authorized to abstain, in whole or in part, from exercising its jurisdiction over such cogenerator-public utilities and small power producer-public utilities. The prospect of plenary regulation unquestionably acted as a powerful disincentive to the generation and sale of surplus power by such facilities, particularly where the owner was an industrial concern unfamiliar with the arcane intricacies of utility regulation. It should be noted that sales of supplemental or back-up power to such cogenerators and small power producers by the local public utility would in most instances be a retail sale regulated by the State.

In Sections 201 and 210 of PURPA, Congress has grappled with both the split jurisdiction and the disincentive to certain desirable kinds of electric generation imposed by

the rigid jurisdictional provisions of the FPA, as well as with allegations that some utilities were not dealing in good faith with certain existing or proposed cogenerators and small power producers. The PURPA scheme, though certainly novel in the context of traditional utility regulation and probably complex to administer, is a logical approach to solving the problems with which Congress was concerned.

Section 201 of PURPA generally defines a "qualifying small power production facility," "qualifying small power producer," "qualifying cogeneration facility," and "qualifying cogenerator." The Commission is to establish by rule the detailed criteria for qualifying facilities of both types. Generally, a qualifying small power production facility (SPPF) can only use biomass, waste, renewable resources (including hydro from existing dams), or a combination thereof, as a primary energy source; and, together with other facilities at the same site, cannot have a capacity greater than 80 megawatts. A cogeneration facility is defined as a facility which produces both electricity and steam or some other useful form of energy, such as heat. There is no size limit for qualifying cogeneration facilities. A qualifying facility of either type must be "owned by a person not primarily engaged in the generation or sale of electric power (other than electric power solely from cogeneration facilities or small power production facilities)."[1]

Having delineated by Section 201 and the Commission rules promulgated thereunder the class with which it was dealing, the Congress provided certain substantial benefits of qualification in Section 210. Broadly stated, these benefits are the following:

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[1] However, a utility or a number or utilities may participate in the ownership of a facility; and nothing in the statute bars a utilit; from operating a qualifying facility. In fact, a utility operating such a facility which it did not own would become a "qualifying cogenerator" or "qualifying small power producer."

(1) Electric utilities (defined as any person, State agency or Federal agency which sells electric energy)[2] can be compelled to buy power from qualifying facilities. The price applied to such required purchases must be just and reasonable to the customers of the purchasing utility and in the public interest. The Commission may not prescribe a price for such sales that "exceeds the incremental cost to the electric utility of alternative electric energy." The price shall not discriminate against the selling qualifying cogenerator or small power producer.

(2) Utilities can be compelled to sell to qualifying facilities. The price applied to such required sales shall be just and reasonable and in the public interest and shall not discriminate against the qualifying cogenerator or small power producer.

(3) Qualifying small power production facilities whose size does not exceed 30 megawatts of capacity and all qualifying cogeneration facilities may be exempted in whole or in part by Commission rule from the Federal Power Act, from the Public Utility Holding Company Act, and from State laws and regulations respecting the financial or organization regulation of public utilities, if the Commission determines such exemption is necessary to encourage cogeneration and small power production.

Rules embodying these principles are to be issued by the Commission within one year after enactment; *viz*, by November 8, 1979. The law provides that the State regulatory authorities and nonregulated utilities are to implement the Commission's rules within a year after they are prescribed.

As this bare-bones description of the statute may or may not make apparent, there is the potential, if not a requirement, for a fundamental reordering of the traditional dual

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[2] The definition of electric utility applicable to Section 210 is that which appears in Title I of PURPA (and which includes the Federal power marketing agencies), not the Title II definition (which does not). The Title II definition (from PURPA § 201) has become a part of the Federal Power Act (specifically, § 3(22)), and thus applies to the parts of PURPA which amend the Power Act. Section 3(4) of PURPA establishes the definition to be applied to those parts of PURPA which, like Section 210, are not made a part of the Federal Power Act.

regulatory scheme as it applies to certain cogenerators and small power producers.[3] Whereas before the FERC had jurisdiction over sales from such power producers for resale in interstate commerce, while the states regulated retail sales, PURPA provides for FERC rules governing *both* transactions. And the states, which have not had jurisdiction over sales for resale in interstate commerce, will in all likelihood carry out the day-to-day regulation of such sales where they involve qualifying facilities (QFs) in addition to continuing to regulate all retail sales, including sales to QFs. However, the regulation of transactions involving QFs may well be conducted under the state regulations implementing the FERC's rules promulgated pursuant to Section 210, rather than under State laws. In other words, the requirement that the States and nonregulated utilities implement the FERC's rules, together with the FERC's authority to exempt QFs from some or all of Parts II and III of the FPA and from State law could (and almost certainly will) result in the delegation-by-exemption to the States of both old and new FERC regulatory responsibilities.

The second major departure from or reordering of traditional utility regulation inherent in the Section 210 scheme is a consequence of the Congress's intention to avoid the treatment of qualifying cogenerators and small power producers as utilities, where such treatment is a disincentive to these kinds of generation. Traditional regulation has, naturally, focused on the seller. For the most part, regulators regulate the public utility, not its customers. There is plentiful precedent for a requirement to sell (Sections 202(b) and (c) of the FPA, virtually all State laws concerning service to retail customer), but almost none for required purchases of the sort provided for in Section 210. Similarly, under conventional regulation, the seller's rates are subject to regulatory approval, the test of the reasonableness of which is the seller's costs. Here, because of the effort to relieve some generators of the burdens of regula-

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[3] Except where a precise point of statutory construction is being discussed, we will use the terms "cogenerator" and "small power producer", interchangeably with, respectively. "cogeneration facility" and "small power production facility."

tion. Congress has established a scheme in which the primary reference point for determining the price for a sale from a QF to a utility is not the seller's cost but the buyer's avoided cost. Indeed, the Congress has specifically instructed FERC that QFs are not to be subjected to the same scrutiny and requirements for organization and reporting as regular utilities; and the authority to grant exemptions is the device which Congress has given the Commission not only to avoid such regulation on its own part, but also to ensure that once the Federal preemption of such regulation is removed, the States do not begin to regulate QFs as utilities.

All this is not to say that there is a lack of precedent for the Commission, State regulators, and nonregulated utilities to look to in implementing Section 210 of PURPA. Many utilities have experience with their own cogeneration (primarily those that provide district heat steam service.) With regard to the sale from a utility to a qualifying facility, the primary model is conventional State-regulated retail sales, though in some instances partial requirements or interchange wholesale rates provide a better basis of comparison. With regard to the sale from a qualifying facility to an electric utility, wholesale rates probably provide the best analogy in most cases, particularly where a relationship between a utility and a number of qualifying facilities begins to resemble a power pool. Useful information may also be gleaned from the not-uncommon arrangement whereby a utility purchases power from an industrial cogenerator or self-generator. A number of States have already begun work on rules concerning cogenerators and a few are quite far along this road, and this also can provide substantial guidance.

Nonetheless, it is fair to say that in many instances the transactions between utilities and those who will qualify under Section 201 have in the past fallen into a gap between the FPC/FERC and State regulators. It is certain that the terms under which these transactions take place vary enormously from utility to utility and region to region. In the following more detailed discussion, we will not attempt to provide in all instances a single correct or even preferred

approach to implementation. Because of regional differences in circumstances, the enormous range of characteristics as to both loads and power production likely to be exhibited by various qualifying facilities, and simple uncertainty as to what the law means or what the best approach to a problem is, we will often merely list some apparent alternatives. By this we do not mean to imply that the Commission will in every case ultimately be faced with making a choice of a single approach from among a number of alternatives. It is quite likely that the Commission will want to leave the States and the nonregulated utilities flexibility for experimentation and accommodation of special circumstances on a number of these matters.

With respect to the nonregulated utilities, consideration will be given as to the necessity of a separate set of rules from that applicable to the State commissions due to the fact that the nonregulated electric utility will be both the entity responsible for implementing the Commission's rules and the utility directly dealing with the cogenerator or small power producer.

Exemptions

Section 210 directs the Commission within a year of enactment to prescribe rules exempting small power production facilities with no more than 30 megawatts of capacity and all cogenerators from part or all of the Federal Power Act, from the Public Utility Holding Company Act, and from State laws and regulations respecting the rates or respecting the financial or organizational regulation of utilities, if the Commission determines such exemption is necessary to encourage cogeneration and small power production. Small power production facilities of greater than 30 megawatt capacity using biomass exclusively as a primary energy source may be exempted from the Holding Company Act and State laws, but not from the Federal Power Act.[4] Under 210(e)(3), no QF can be exempted from Part I

[4] Thus the Commission is not authorized to exempt small power production facilities of 30 to 80 megawatt capacity from any of these laws, with the exception of biomass users who still canot be exempted from the FPA. As a technical matter, this would leave in place two conflict-

of the Power Act, Sections 210,211 and 212 of the Power Act (added by Sections 202, 203 and 204 of PURPA, and having to do with interconnection and wheeling), and State laws and regulations implementing the Commission's rules promulgated pursuant to Section 210.

It is clear from the Conference Report that Congress intended the Commission to make liberal use of its exemption authority:

> The conferees wish to make clear that cogeneration is to be encouraged under this section and therefore the examination of the level of rates which should apply to the purchase by the utility of the cogenerator's or small power producer's power should not be burdened by the same examination as are utility rate applications * * *. The conferees expect that the establishment of utility type regulation over them would act as a significant disincentive to firms interested in cogeneration and small power production.

Although we have not conducted an exhaustive survey, there is good reason to believe that many if not most State laws provide for regulation of cogeneration and small power production facilities as utilities. These State laws have been rendered ineffective in most instances because of the FPA preemption of regulation of sales for resale in interstate commerce. Were the Commission to exempt QFs from FPA regulation, but not from State regulation, the State laws would then take effect, frustrating the intent of Congress that QFs not be subjected to same scrutiny and organizational requirements as utilities. It would be difficult to maintain that the Federal preemption continued even after

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ing regulatory schemes covering this group: Section 210 pricing, and traditional Federal Power Act regulation of the QSPP who becomes a Part II public utility by virtue of a wholesale sale into interstate commerce. The Conference Report resolves this for the most part by instructing the Commission to use Section 210 pricing for this group. Left unresolved are two questions: (1) What will be the effect of State regulation on small power producers of greater than 30 megawatts who are making sales for resale but not into interstate commerce (such as in Alaska, Hawaii, Puerto Rico and most of Texas)? and (2) Should the Commission exempt biomass small power producers in these areas from State regulation, where the consequence is that they will not be regulated at all?

the Commission exempted QFs from the FPA (that is, that the area was deliberately left vacant, and that the States could not then occupy the area) if the Commission chose not to exercise its authority to exempt from State regulation. Therefore, it seems likely that in the great majority of cases where the Commission provides an exemption from the FPA it will also want to provide substantial exemptions from State law.[5]

Basically, there are two approaches that can be taken to the State law exemption. The first, which is both more precise and more cumbersome, is to analyze the laws of each State and specify the exemptions to be provided citing sections of State law and regulations. We do not recommend this approach, except possibly for the noncontiguous states and territories and contiguous areas not hooked into the interstate grid (primarily parts of Texas). The second approach is to make a broad prescription exempting from any and all provisions of State law and regulations as would conflict with the State's implementation of the Commission's rules under Section 210. This approach, while it may lead to some disputes which the Commission will have to become involved in, has the advantages of simplicity, administrative ease, and permanence (*i.e.*, the language of the exemption would have to be changed every time a State changed its laws or regulations).

While the proper course seems obvious with regard to Federal and State rate regulation and the requirements for filing voluminous reports concerning operation, cost and

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[5] Note that the Commission does not have the authority to exempt cogenerators from State regulation as a steam utility. This fact may have somewhat disparate consequences (assuming that some cogenerators may be interested in selling steam), since some States do not regulate steam sales, some do so only if the seller is already a utility, and some do so whether or not the seller is an electric utility.

A quite different and somewhat anomalous situation involving preemption may arise if a State has by statute directed the State regulatory authority not to regulate cogenerators. The most reasonable approach to this situation would seem to be to treat the State law as consistent with Section 210 of PURPA, in that (as the Introduction points out) it is really the utility as buyer and seller that is regulated.

revenue data,[6] the matter of exemption from provisions of the FPA concerning financing and related matters and from the Public Utility Holding Company Act is not nearly so clear. Pending consultation with the Staff of the Securities and Exchange Commission, we will not attempt an exhaustive analysis of this subject. However, as a rule of thumb it seems reasonable to provide that where a firm is subjected to more stringent regulation than other companies simply because it is engaged in electric utility business, those requirements should be eased through exemptions for QFs; but where a certain kind of regulation is applied to electric companies under the FPA or the Public Utility Holding Company Act, and applied in equal measure to non-utilities under other statutes enforced by the S.E.C., the argument for exemption is not nearly so strong. An example of the former, utility-only kind of provision is the requirement that a holding company show that its subsidiaries are or are capable of being operated on an integrated basis. In this case, we think, exemption warranted. By contrast, exemption from certain security acquisition and interlocking directorship provisions may not be warranted.

As the Conference Report indicates, some participation by one or more utilities in the ownership of qualifying facilities may be permitted by the Commission's Section 201 rules. However, an exemption granted to a facility under 210(e) would not serve to release a utility or holding company participating in some way in a QF's ownership from any other unrelated obligations it may have under the law, since Section 210 permits the exemption of the QF, not of a parent (or grandparent). (In this context, we take this to mean that where a facility is granted an exemption, participation in the ownership of the facility will not give rise to a particular legal obligation that would have otherwise attached). We interpret 210(e) as giving the Commission sufficient flexibility to grant an exemption such that a non-utility parent is relieved of certain obligations while a

[6] Though it is worth noting that some exemptions here will affect the data provided to the Energy Information Administration, where EIA's authority is derived from the Federal Power Act.

utility or holding company participating in the same project is not. Again, the test for an exemption is whether it is "necessary to encourage cogeneration and small power production."

Finally, it should be noted that the exemption of QFs from traditional utility-type regulation, as specifically discussed in the Conference Report, may have the effect of making QFs eligible for a 20% energy investment tax credit. A recent change (March 1979) in Treasury Department regulations permits the exclusion from "public utility property" of property used in the business of the furnishing or sale of electric energy if the rates are not subject to regulation that fixes a rate of return on investment. Prior to the change, any rate regulation made property subject thereto (and involved in the furnishing or sale of electric energy) public utility property. Being thus excluded from public utility property, qualifying facilities have an opportunity to come within the definition of "alternative energy property," and thus qualify for the 20% ITC.

In fact, it may well be that even small power production facilities too large to be exempted may be eligible for the higher tax credit, due to the Conference Report's instruction to set the prices for sales by these SPPFs to utilities "in accordance with the requirements of" Section 210 rather than by "utility-type regulation."

Interconnection

Section 210 requires that utilities buy from and sell to QFs. It does not, however, explicitly provide authority to the Commission to order any interconnection necessary to effect the required transaction. The question thus arises as to whether there is inherent in section 210 of PURPA the authority to order such interconnections, or whether QFs must use Sections 210 and 212 of the FPA (added by Sections 202 and 204 of PURPA) to gain interconnection.

Perhaps the strongest argument against the finding that there is an interconnection authority within the cogeneration section is that the interconnection section itself explicitly lists qualifying cogenerators and small power producers as among those who are eligible to make an application. (By

contrast, the next section, dealing with wheeling, does not confer eligibility on QFs). Moreover, the requirement under Sections 210 and 212 of the FPA that the party seeking interconnection must show himself to be ready, willing and able to pay the resulting costs, and the companion criterion that the interconnection order not be issued if it would result in a reasonably ascertainable uncompensated economic loss for any electric utility, might be seen as consistent with the statement in the Conference Report that the cogeneration section was not to be applied so as to force a utility's customers to subsidize a qualifying facility.

Although this argument is respectable, we think it the better view that the requirement to interconnect is subsumed within the requirement to buy and sell. To hold otherwise would mean that Congress intended to have qualifying facilities go through an extended and expensive proceeding simply to gain interconnection, contrary to the entire thrust of Sections 201 and 210.

These sections evince the clear Congressional intent to encourage development of these desirable forms of generation, and to have the commercial development of these facilities proceed expeditiously. In other words, Congress has already made the judgment that these kinds of facilities serve one of the purposes of the Act as set out in Section 101, *viz*, "the optimization of the efficiency of use of facilities and resources by electric utilities", and it would be both redundant and unduly burdensome to have the sponsors of individual facilities show in an evidentiary hearing (FPA § 210(b)(2)) that their project in particular would serve this end (or one of the other related goals established as criteria for an interconnection order in § 210(c)(2)). After all, the purpose of an interconnection application, whether under Section 202 or 210 of the FPA, is to secure service, whether emergency or otherwise; and Section 210 of PURPA establishes the entitlement of a QF to service from the interconnected utility. In effect, the proponents of the view that a QF must apply under Sections 210 and 212 of the FPA have the burden of showing that Congress intended interconnection and the entitlement to buy and sell be denied to a QF which is unable to make the showings re-

quired by those sections even though a previously-interconnected customer installing qualifying facilities would not have to do so.

This is not to say that all of the protections that Congress has given the target of an interconnection application in Sections 210 and 212 of the FPA are necessarily absent from Section 210 of PURPA. The Conference Report on Section 210 states that customers of utilities are not to be compelled to subsidize QFs, and this principle would seem to bear on the question of who pays the costs of interconnection as well as on the per-unit price to be paid for energy. On the other hand, the conference Report includes a prescription against "unreasonable rate structure impediments, such as *unreasonable hook up charges.*" (emphasis added) This provides another argument in favor of reading Section 210 as including interconnection authority, since the elaborate cost determination required under Sections 210 and 212 of the FPA is redunant if the costs of interconnection are viewed simply as a feature of the rate structure with the charge therefor based on the cost of the utility.

Reliability

Section 210(a) states that the rules requiring utilities to buy from and sell to QFs "shall include provisions respecting minimum reliability of [QFs] (including reliability of such facilities during emergencies) and rules respecting reliability of electric energy service to be available to such facilities from electric utilities during emergencies."

This statutory language raises the question of whether the Commission *must* prescribe minimum reliability requirements for qualifying facilities selling to utilities.

Section 201 specifically mentions reliability as one of the factors the Commission may take into account in establishing the criteria for qualifying small power production facilities. (It is not mentioned in the parallel language concerning co-generators.) We read Section 201 as permitting but not requiring the Commission to establish a minimum standard for the reliability of small power producers. Whether one agrees with this interpretation or believes that the Commission must establish such a threshold, the

question remains as to why the Congress included provisions concerning reliability in Section 210 for both kinds of facilities after having mentioned it in Section 201 as to one kind but not the other.

Of course, the degree of reliability and/or availability can and should be reflected in the price for electric service, whether a utility or a QF is the seller. Putting a price tag on a particular degree of reliability is practically an everyday exercise for utilities and regulatory agencies. Put another way, then, the question is whether the Congress intended the Commission to establish rules on QF reliability under Section 210 that went beyond a requirement that differences in reliability be fully reflected in prices.

The Congress evinced a clear concern that utility customers not be required by the Commission's Section 210 rules to subsidize QFs. The 210(a) language concerning reliability might well have been intended to prevent indirect subsidies resulting either from frivolous or otherwise uneconomical interconnections (with the costs borne by the utility's customers) or from a diminution in the quality of service rendered by a utility due to an interconnected facility's disruption of a utility's operations.

Elsewhere in this memorandum we have recommended that the incremental costs of interconnection or reinforcement of a utility's distribution and transmission facilities (*i.e.*, those costs which the utility would not have incurred in securing the same power from an alternative source, or in providing service to the qualifying facility if the facility did not have its own generation) should be borne by the QF. So long as facilities can be devised which are sufficient to protect the utility from disruption of its operations by a QF—and our present understanding is that such protective devices can always be provided—and the QF rather than the utility bears the costs of these facilities, then no such indirect subsidy would occur.

Our analysis thus leads us to the conclusion that every incidence of a QF's reliability (or unreliability) can be accounted for through prices. If this conclusion withstands the test of public comment, we would recommend to the Commission that it establish no minimum reliability stand-

ard pursuant to Section 210(a), but that it make full provision for the consequences of varying degrees of reliability in the rules on pricing.

It is reasonable to expect many different kinds jof facilities to be covered by and become involved with Section 210, ranging from large, self-sufficient and previously-isolated industrial generators to small, experimental and somewhat exotic facilities. The reliability that these different kinds of QFs will need from utilities and will be able to offer utilities will run the gamut. The needed services may vary from something comparable to a typical firm retail sale to more sophisticated pooling and interconnection arrangements. Similarly the service offered by QFs to electric utilities will range from dump or interruptible energy to firm power sales, *i.e.*, a reliable substitute for capacity that would otherwise be installed by the utility.

It is difficult, if not impossible, to predict what kinds of facilities will present themselves to any given utility. Thus it appears that the approach that would best satisfy the statutory mandate to encourage cogeneration and certain types of small power production is to require all electric utilities to offer to buy and sell services providing a complete range of reliability,[7] with the proviso that in each instance the price will have to be calculated so as to satisfy the other provisions of section 210, including the principle that utility customers not be compelled to subsidize QFs.

This requirement that electric utilities offer a complete menu of services (at appropriate prices) should not be too great a hardship, at least for public utilities, since between their wholesale and retail rate schedules most now offer a broad range of services, including firm all requirements, standby, interruptible and emergency services (though many do not offer what may be the closest parallel in many instances, partial requirements service).

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[7] We do not mean to imply by this that qualifying facilities could rely on this requirement to secure a higher degree of reliability that firm, full requirements customers, or secure for themselves a higher priority than other customers with similar end-uses under a short- or long-term emergency load-shedding plan.

With regard to emergency sales from QFs to utilities, we would note that cogenerators and small power producers can be the subject of an order under Section 202(c) of the FPA to provide energy if the Economic Regulatory Administration determines that an emergency exists. Absent the declaration of a 202(c) emergency, we would recommend leaving the terms of emergency availability to the negotiations of the parties, subject only the rule recommended in the preceding paragraphs.

Sales from Utilities to Qualifying Facilities

Section 210(c) of PURPA provides that:

The rules prescribed under Subsection (a) [which requires, *inter alia*, that utilities sell to QFs] shall insure that in requiring any electric utility to offer to sell electric energy to any qualifying cogeneration facility or qualifying small power production facility, the rates for such sale—

(1) shall be just and reasonable and in the public interest, and

(2) shall not discriminate against the qualifying cogenerators or qualifying small power producers.

* * * * *

This statutory language is similar to the language contained in Sections 205 and 206 of the FPA and is probably similar to many of the State statutes with respect to utility regulation. Such language thus permits traditional ratemaking concepts with respect to the sales to QFs.

In most instances, it would appear appropriate for the proposed rules to require the States to apply their standard ratemaking concepts in establishing rates for the QFs to the extent possible, even where there is a significant difference between FERC's approach and that of a state. That is, in most instances the test as to whether a QF is being discriminated against *as a utility customer* will be made by comparing the QF to other retail customers of the utility. For example, although California might choose to exempt qualifying facilities from having to pay a share of the subsidy for lifeline rates required of other industrial customers, there does not seem to be a valid argument that the failure to exempt QFs is discriminatory, since the QFs would sim-

ply be treated like others in the class to which they would belong if they did not have their own generation. Similarly, there seems no reason why any steps taken under Title I of PURPA with respect to such matters as time of day rates should not also apply to QFs.

In determining the rates to QFs, one of the first issues likely to arise is whether all or some QFs should be served as a separate rate class or included among a more general class such as the industrial or large power customers. It would appear that latitude should be given in the rules to permit inclusion of QFs within a general rate class to the extent that the load characteristics permit. This may be the most practical approach where the number of potential QFs is relatively small and might not warrant the costs associated with developing a separate rate class. Similarly, latitude should be given to permit classification as a separate rate class if the number of potential customers is large and/or the load characteristics are likely to impose substantially different costs on the system from the general rate class. These general problems of customer classification will of course become less important to the extent the states move to time-of-day rates.

Two major problems arise in the area of customer class assignment due to a shortage of good data. First, a majority of utilities do not have good load data even for their major retail customer classes, and in a number of states neither the utilities nor their regulatory agencies set rates based upon a class cost of service calculation. (The load data problem will be resolved over the long haul for the larger electric utilities by Section 133 of PURPA, which requires the collection of cost and load information by customer class.) Second, even where utilities have good data for their existing major classes, estimates as to the service requirements of QFs, and thus the costs imposed on the utility (determined to a considerable extent by the outages of the customer's own generation and the type of standby service the customer wants), may not at first rise above the level of speculation.

The second problem may be eased substantially over the short run if QFs and utilities can agree to contracts speci-

fying the services the utility will be called on to provide. However, where the two parties cannot reach this kind of agreement (such as where a cogenerator is unsure of its own production and is not willing to contract for interruptible service from the utility for any part of its potential load), the problem remains.

Whether or not a QF agrees to specific contractual levels of service, and whether a QF is assigned to an existing customer class, has a custom-designed individual rate, or is placed in a special class (or one among several special classes) for QFs, the first problem does not seem susceptible of precise solution over the short term. It would seem difficult to declare with any confidence that rates for a particular customer or class of customers is just and reasonable if there is no approved way of determining the customer's cost responsibility; and it would seem to be impossible to determine with any precision whether or not a proposed rate were discriminatroy when one does not know the cost of serving the class or classes whose rates the QF's rates are to be compared to. Indeed, it may even be difficult to determine whether or not some or all QFs should be grouped with a particular class or subclass when little is known about the cost and load characteristics of the class.

Since some cogenerators and small power producers may have operations similar to those of utilities with generating facilities, the rules should provide sufficient latitude to permit interconnection and coordination agreements or partial requirement agreements similar to those subject to this Commission's jurisdiction. This would provide contractually specified operating criteria and would allow a full range of services including the sharing of mutual benefits of diversity and coordination. In fact, wholesale rates may provide some makeshift basis for determining what retail rates are appropriate for QFs where little is known about retail loads and costs by class.

Where large numbers of existing customers are converting their operations from those of a full requirements customer to that of a cognerator or small power producer, such conversion may significantly alter total system loads and costs and almost certainly alter the outcome of a class

cost allocation. To the extent that the conversion increases the total system costs from what they would otherwise be, or, more likely, leaves roughly the same fixed costs to be spread over fewer units sold, the rules should permit consideration of this fact by the states in determining the rates for such customers and the remaining customers on the system.[8] This situation might become a significant factor in determining whether the rates are in tne "public interest" as required by Section 210(c). (The effect on system loads and costs is also an important consideration in determining the rate for power purchased by the utility from the cogenerator or small power producer, as discussed later.].

One of the most often discussed problems of rates for cogenerators or small power producers is the charge for backup or standby service. Here, the question of what costs the customer(s) imposes on the utility, and thus what the appropriate rate is, essentially turns on three factors: first, the reliability of customer's generating equipment, or, put another way, the likelihood that the customer will be unable to supply part or all of his own electricity needs; second, the extent to which the customer will call on the utility to make up such a deficiency; and third, the degree of coincidence between such outages and the utility's peak demands. Cogenerators generally argue for lower backup charges based on the fact that they are unlikely to experience outages all at the same time, whereas the utilities argue for higher charges due to lack of ability to predict the time or duration of an outage since the operation of the facilities is outside a utility control. In part, this argument comes down to prudent utility planning for meeting loads that are potentially volatile and are dependent in part on the maintenance practices of the nonutility operators.

Where there is not a retail class of customers for backup service, with a rate based upon group outage probabilities, or perhaps even where there is such a class, latitude should be given in the rules to permit groups of qualifying cogen-

[8] We do not mean to imply that the entire shortfall, if there be any, should be imposed on QFs; rather, we merely suggest that it does not seem inappropriate for QFs to bear some share of the burden.

erators or small power producers to contractually "pool" their operations among themselves to minimize the potential cost impact on the utilities. By first pooling among themselves, QFs might facilitate individual contractual dealings with utilties and reduce its attendant costs. Pooled QFs certainly could make a much stronger argument that probabilistic analysis should be used in determining the backup charges, and based on the coordination the analysis would show a lowered probability of coincident outages. Such "pooling" might include arrangements such as coordinated maintenance or mutual spinning reserves.[9] The pooled operations could also be coordinated with the utility further to minimize the potential cost impact of outages. Such pooling would entail some sacrifice of the QFs' flexibility in operations, but the resulting lower backup charges may provide a sufficient incentive. To the extent that operations are not coordinated and individual QFs and the group of QFs as a whole impose greater capacity requirements on the utility system, the costs of such backup service should be fully recovered.

In the analysis of and negotiations over backup probabilities and responsibilities, recognition should be given to the fact that some cogenerators will not be able to continue part or all of their industrial operations if their steam (and thus electric) production facilities break down or are closed down. In other words, some cogenerators may not want or need backup for the part of their electric requirements related to industrial processes that also require steam—when there is no steam, they shut down and go home. On a related matter, recognition should be given to a customer's own backup or reserves in the form of redundant capacity. A customer having sufficiently reliable facilities of its own might consider contracting for backup service from the utility on an as-available basis for the portion of its load that it is sure it can supply itself.

[9] Although the latter would arguably reduce backup generating requirements on the utility's system it may not reduce transmission costs.

One likely area of contention that arises in connection with interruptible and standby service is the recovery of the utility's customer or facilities costs. There is likely to be somewhat less debate concerning the magnitude of these costs where the customer is a large industrial or commercial facility, since the design of facilities and determination of their cost is often arrived at on the basis of individual negotiation now even where the customer does not have its own generation. [We will discuss these interconnection costs in the next section.[Where smaller customers are involved, however, the rate design for the class to which the customer is assigned may provide for the recovery of some customer costs through usage charges, and may also provide for the recovery of some capacity costs through energy charges. In these situations, the utility is likely to assert—and with considerable merit—that minimum charges have to be increased so as to ensure the recovery of its fixed costs (and some expenses) from dedicated facilities when the customer does not buy enough energy in a given period to reimburse the utility under the conventional rate design. A minimum bill calculated to recover these costs would seem to be a reasonable approach to this matter, though a discrimination problem might arise if the QF is paying a fully compensatory minimum charge while substantial numbers of customers in the class to which the QF would belong but for its own generation do not return their customer costs.

The final question to be addressed in this section is whether the Commission should specify the kinds of interconnection that should be made available to QFs as customers of a utility. Specifically, the question is whether QFs in general should have an entitlement to operate in parallel with utilities (so that the same customer circuits can be served simultaneously by both customer- and utility-generated electricity), or whether this should be left to the States or the parties (in which case some QFs may be forced to segregate circuits).

In addition to the considerations of cost and possible interference with system operations, there are safety aspects which will require coordination and procedural safeguards.

For example, when certain lines are taken out of service in order to perform maintenance or repairs on such lines, adequate procedures must be in place to ensure that they are not energized by the other party prior to completion of the work. However, on the basis of preliminary discussion it appears that problems of operations, equipment protection and worker safety can all be solved, and that in the final analysis this question mostly concerns cost. Therefore, we recommend that operation in parallel be a required option, so long as the customer is willing to bear the costs of the facilities necessary to protect workers and equipment.

Sales from Qualitying Facilities to Utilities

Section 210(b) of PURPA provides that the Commission's rules shall insure that in requiring any electric utility to offer to purchase electric energy from any qualifying cogeneration facility or qualifying small power production facility, the rates for such purchase—

(1) Shall be just and reasonable to the electric consumers of the purchasing utility and in the public interest, and

(2) Shall not discriminate against qualifying cogenerators or qualifying small power producers.

* * * * *

The statute provides that the rate for required purchases not exceed the incremental cost of alternative electric energy, which is defined as the cost of energy which, but for the purchase, the utility would generate or purchase from another source. The rules may not authorize a QF to make a sale other than for resale, though State law may permit a QF to make such sales.

Perhaps the most important question facing the Commission in the pricing area (but probably not the most difficult question) is whether Section 210 contemplates the payment of capacity charges to QFs under any conditions. Section 210 itself speaks only in terms of "electric energy." While this term does not exclude the payment of capacity charges, it does not clearly include it either. For the most part, the Conference Report also uses the term "electric energy." Even the example given in the Conference Report (in support of the point that the cheapest energy available

at a given time does not necessarily fix the ceiling of the amount to be paid a QF, because the utility may not have intended to use that cheap (hydro) power at the time the sale took place) is cast in terms of energy costs and energy charges.

There is, however, considerable language in both the statute and the Conference Report in support of the proposition that capacity payments are, at least in some circumstances, not only legal but mandated. First, the "incremental cost to the electric utility of alternative electric energy" would, where capacity is purchased or installed, include a capacity cost. If a cogenerator were offering energy of a like reliability for a similar term, the alternative cost would clearly not be limited to, for example, the energy component of the alternative rate where the alternative is a firm or unit purchase. Indeed, one can well argue that to pay the QF a price based only on displaced energy costs where another utility would receive a capacity payment as well for the same service is discriminatory in violation of the statute.

The Conference Report addresses the calculation of the alternative cost standard at some length. The final paragraph of this section of the Report is the following:

The conferees expect that the Commission, in judging whether the electric power supplied by the cogenerator or small power producer will replace future power which the utility would otherwise have to generate itself either through existing capacity or additions to capacity or purchase from other sources, will take into account the reliability of the power supplied by the cogenerator or small power producer by reason of any legally enforcible obligation of such cogenerator or small power producer to supply firm power to the utility.

The references to "additions to capacity" and to obligations "to supply firm power" (the rates for which, in our experience, always include a capacity component) bring us to the conclusion that the better reading of Section 210 is that capacity payments to QFs can be required under certain circumstances; and that, indeed, a utility's refusal to make

payments based in part on avoided capacity payments could be discriminatory.

The paragraph from the Conference cited above also has a message for QF's, however; utilities make capacity payments to each other where firm commitments to make and hold capacity available are involved. A cogenerator or small power producer which is unwilling or unable to make such a commitment and to achieve a high degree of reliability, is not enabling the purchasing utility to avoid the costs of construction or a capacity purchase, and thus these costs do not serve to increase the ceiling on the rates the QF can demand.

In short, the statute provides an upper limit on the price for a capacity purchase (including an energy rate component) at the alternative capacity and energy costs avoided due to such purchase. Among other things, the duration of the purchase, the planning horizon of the utility and the capacity and load situation of the utility will affect such alternative costs. Generation expansion models (which discount the future costs of alternatives to a common present value) may be used to quantify such costs once the magnitude and duration of capacity purchases are known. The composition of such studies would vary depending on the answers to certain questions: Will utilities be required to pay now on a discounted basis for capacity not yet needed? Will capacity sales have priority over dump energy? How far into the future must utilities commit to buy, both as to initiation and duration of the sale?

Interruptible (by the QF) energy sales can be priced a number of ways. Fopr example, a split-the-savings concept similar to economy energy purchases in existing interchange agreements could be employed.[10] Although economy energy is normally priced on an hour-by-hour, transaction-by-transaction basis, consideration should be given to a more general approach with lower administrative costs such as estimated monthly or annual savings. The differ-

[10] This analogy may be of some assistance where a State's fuel adjustment clause rules, like FERC's, permit a complete pass-through to customers of the cost of economy purchases where the cost is lower than that of the displaced fuel.

ence between the cogenerator's out-of-pocket cost and the utility's out-of-pocket cost avoided as a result of the transaction would be shared on an equitable basis between the QF and the utility. Rather than the typical equal split of the savings, latitude should be given to permit negotiations resulting in a greater proportion of the savings going to the cogenerator in order to encourage cogeneration as intended by the statute. So long as the price is less than the alternative cost to the utility, the buying utility's ratepayers benefit from such transactions, and the statute would seem to be satisfied.[11] Such an approach may seem to depart from the Conferees' directive not to scrutinize the costs of QFs as though they were utilities. However, this approach should not generally produce a substantial burden on the QF since in most cases the QF should have calculated its marginal energy cost to determine if it can afford to sell to a utility, particularly at times when the utility's marginal running cost is low. In any case, the statute does not prohibit all inquiry into a QF's costs, and this approach would not require a determination of a reasonable rate of return to the QF, which appears to be the conferees' primary concern.

Where a utility is a member of a centrally dispatched pool, the pool's marginal running cost will probably be the appropriate measure of the ceiling for energy rates. Simi-

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[11] The Conference Report states that a utility shall not be required to purchase energy from a QF at a rate which exceeds the lower of (1) the rate that is just and reasonable to the utility's customers and nondiscriminatory as to the QF and (2) the incremental cost of alternate electric energy. As stated above, we think that so long as the service being offered by a QF is fully comparable to the alternative, the payment to the cogenerator of the full cost of the alternative would be just and reasonable to the utility's customers. Thus we have difficulty in describing some particular price other than the avoided cost as being just and reasonable to the utility's customers; and difficulty in giving the Conference Report language cited above any precise meaning in a particular situation, other than that some price below the avoided cost is also just, reasonable, and permitted by statute. We do *not* understand the prescription that the proper price is the lower of the just and reasonable price and the avoided cost as requiring that the selling QF be restricted to a minimal mark-up from its marginal generation cost on its sales to a utility.

larly, if a pool has coordinated planning for capacity additions, the pool's method of sharing those costs should be considered, and in some instances utilized, in determining a pool member's avoided capacity costs.

As in the case of purchases by QFs, the rules for sales by QFs should permit sufficient latitude to allow "contractual pooling" among QFs to "firm up" capacity available to utilities. Such pooling could permit such things as coordinated scheduling for maintenance which would increase the assured availability of capacity to the utility. Although this may assure increased generating capacity, further consideration should be given to the potential impact on transmission costs of such arrangements.

Section 210(b) also requires that the rates for the purchases by the electric utilities not discriminate against QFs. It is not clear whether the statute only bars discrimination against QFs as a class, or whether it would also bar discrimination among QFs. If the latter, this may create some practical problems in administration. Since the price to be paid for the purchases by the utility is dependent, in part, on the utility's avoided costs, and these costs will vary over time and with the number and magnitude of cogeneration arrangements previously entered into, the rates paid will probably have to differ from one arrangement to another depending on when they were entered into and what future costs are being avoided. Further, as with multiple simultaneous interchange transactions, some priority among QFs may have to be established to determine which is viewed as displacing the utility's highest cost alternative power. Some vintaging arrangement or consistent formulary approach to the computation of the costs avoided may be considered in the rule for the purpose of determining whether the rates discriminate among qualifying facilities.

Under certain circumstances it may be desirable to allow a cogenerator or small power producer to sell all its output to a utility and at the same time purchase all its needs from the utility. Specifically, where a utility needs additional capacity, and one of its customers can build and operate a new generator more cheaply than the utility can, it would be in everyone's interest for the QF to build the unit. How-

ever, if the utility's embedded cost-based rates even after it built the new plant are lower than the incremental cost of power from the new facility the QF would have built, then it would be in the QF's interest to let the utility build the plant and supply its needs. Put another way, if a QF were prohibited from buying from and selling to a utility simultaneously, it would be compelled to "buy" from itself at its marginal cost. Where this is lower than the utility's rate based on average embedded cost, then the QF would still build the facility, as it should in this situation; but where the utlity's rate is lower than the QF's marginal cost, the wise firm would allow the utility to build and operate the new plant, even though it cannot do so as cheaply as the QF. This problem only arises where a new facility is involved. We have no idea how often the costs would be such that the more costly plant would be built[12] but since the utility's customers would benefit whenever a QF builds a lower-cost plant than the utility can build, we tentatively recommend that this simultaneous buying and selling be permitted in connection with new facilities.[13]

With regard to existing facilities, however, the situation is exactly the reverse. Here, permitting a customer who has been providing part or all of its own power needs to sell to a utility at or near the utility's incremental cost and simultaneously buy back the same power at average embedded cost would drive up the costs of power to the utility's other customers without doing anything to encourage new cogeneration or desirable kinds of small power production. Thus we would recommend that the rule prohibit this practice.

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[12] Unfortunately, it is quite possible that the difference in the investment tax credits which may be available to, respectively, a utility and an owner of a QF will distort this cost comparison.

[13] Under the provisions of the Fuel Use Act of 1978, the sale of more than 50% of the output of a new installation would give the facility the status of an electric power plant. As a consequence, absent exemption on other grounds, a cogenerator could not use oil or gas as the basic generation fuel. However, the Fuel Use Act does not apply to installations consuming less than 100 million Btus per hour.

As indicated in the preceding section, the ratemaking aspects of the interconnection costs may be handled in a variety of ways. Depending upon the size and type of generating equipment a QF has, whether or not the QF wants to operate in parallel with the interconnected utility, and the extent to which the QF expects to sell to the utility, many different types of facilities and arrangements may be appropriate. In many situations, all the required facilities may not be placed on the QF's facilities or at the point of interconnection; rather, it may be necessary for the utility to install or modify equipment elsewhere on the system in order to protect its and QF's equipment and operations.

While we are of the view that the authority to order interconnections is inherent in the Commission's other powers under Section 210, we do not regard this as settling the question of who bears the attendant cost. As to this question, we think the proscription against compelling to the utility's customers to subsidize QFs is dispositive: the QF should pay the reasonable costs of the interconnection necessary and appropriate to its circumstances. By the same token, however, the comparable costs attending the purchase or supplying of the same electric energy from an alternative source should be taken into account in determining the price the utility should pay the QF for electricity.

The recovery of the utility's costs of interconnection can be accomplished in either of two ways: through a lump-sum hook-up charge, or through a credit (where the utility is buying from the QF) or surcharge (where the QF is buying from the utility) to the basic price. Where these facilities' costs are to be amortized over a period of years or volume of sales, it would seem reasonable to allow the utility to secure its investment in some manner where either the financial integrity of the QF or the duration of the arrangement are in question.

As this entire discussion of pricing and interconnection indicates, the variety of arrangements that might be made between QFs and utilities is enormous. Therefore, we would recommend that the Commission promulgate broad general rules in the nature of guidelines, leaving flexibility

for the States to experiment and accommodate local circumstances, and leaving room for the parties to negotiate the particular terms and conditions of their arrangements within the broad parameters of the Commission's rules. Under this approach, the States and the Commission would function more as arbitrators of disputes the parties can not resolve than as traditional regulators. This approach is, in our view, practically unavoidable with regard to the sales by QFs to utilities. On the other hand, as noted above, the sale from utilities to QFs is in most instances the type of transaction the States now regulate, and continuation of this regulation without substantial change is certainly a real option.

Finally, we must observe that the arbitration of disputes approach espoused above is not appropriate where a utility is participating in the ownership or even the operation of a QF. We would recommend that the specific terms of such arrangements be scrutinized by the States to ensure that the pricing or other provisions are not unduly discriminatory or beneficial.

Environmental Impact Statement

It appears to us that an environmental impact statement will not be necessary for Section 210 alone. We reach this preliminary conclusion on the basis that most of the effect of Section 210 flows from statutory mandates as to which the Commission has little or no discretion the requirement that utilities buy from and sell to QFs; the requirement that the Commission grant exemptions necessary to encourage QFs (through it is not authorized to grant exemptions from environmental laws or regulations); and the requirement that prices be set within certain guidelines. In other words, we do not think that the Commission's adoption of one set of rules rather than another on those matters as to which the Commission has discretion or flexibility would constitute a major Federal action significantly affecting the quality of the human environment.

There does exist some question in our minds, though, as to whether the Section 201 rules together with the Section 210 rules will establish the fuel use and fuel efficiency

standards for qualifying cogenerators and qualifying small power producers; and the Section 210 rules will describe with some greater specificity than does the statute the benefits of qualification. The environmental impact of this part of PURPA (whether or not the impact is significant) will be a product of the two rules acting together.

As stated elsewhere in this memorandum, we anticipate that the number, size, and kind of QFs that will develop will vary considerably from state to state and region to region. Similarly, the amount and kinds of utility fuel displaced by QFs will differ significantly around the country. As a consequence, the states would appear to be in a very good position to provide the information from which the Commission can determine whether the Section 201 and 210 rules would have a significant effect on the quality of the human environment and whether that effect will be beneficial or detrimental. Therefore, we recommend that the Commission promptly invite comment from the States in particular and the public in general on this matter so that, at the least, there will be a basis for an assessment of environmental impact.

End of Memorandum.

Written Comments

Interested persons are invited to submit written comments on this staff paper to the Office of the Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, N.E. Washington, D.C. 20426. Comments should reference Docket No. RM79-55 on the outside of the envelope and on all documents submitted to the Commission.

Fifteen (15) copies should be submitted. All comments and related information received by the Commission by August 1, 1979, will be considered prior to the promulgation of final regulations.

By the Commission.

KENNETH F. PLUMB,
Secretary.

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UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

[18 CFR Part 292]

Docket No. RM79-55

SMALL POWER PRODUCTION AND COGENERATION FACILITIES—RATES AND EXEMPTIONS

NOTICE OF PROPOSED RULEMAKING REGARDING THE IMPLEMENTATION OF SECTION 210 OF THE PUBLIC UTILITIES REGULTORY POLICIES ACT OF 1978

(Issued October 18, 1979)

Section 210(a) of the Public Utility Regulatory Policies Act of 1978 (PURPA) requires that the Commission prescribe rules as it determines necessary to encourage cogeneration and small power production, requiring electric utilities to offer to:

(1) sell electric energy to qualifying cogeneration facilities and qualifying small power production facilities, and

(2) purchase electric energy from such facilities.

In addition, section 210(e) of PURPA requires the Commission to prescribe rules under which qualifying cogeneration and small power production facilities are exempted, in whole or in part, from the Federal Power Act, from the Public Utility Holding Company Act of 1935, and from State laws and regulations respecting the rates or respecting the financial or organizational regulation of electric utilities, if the Commission determines such exemption is necessary to encourage cogeneration and small power production.

On June 26, 1979, in Docket No. RM79-54, the Commission issued proposed rules regarding the determination of which cogeneration and small power production facilities are qualifying cogenration facilities or qualifying small power production facilities. Such qualifying facilities are entitled to avail themselves of exemptions set forth in section 210 of PURPA, and are eligible for exemption from the in-

cremental pricing provisions of section 206(c) of the Natural Gas Policy Act of 1978 (Order No. 49, § 282.203(e), issued September 28, 1979, 44 F.R. 57726).

On June 27, 1979, in Docket No. RM79-55, the Commission issued a Staff discussion paper regarding issues arising under section 210 of PURPA.[1] The Staff discussion paper set forth many legal and policy questions arising under section 210 of PURPA. In addition to those issues, comments received in response to the Staff discussion paper and in the public hearings held in San Francisco, Chicago, and Washington, D.C. in July, 1979 on this topic raised new questions regarding the Commission's responsibility to exercise its authority under section 210. The Commission has taken into consideration these questions and comments in developing this proposed rulemaking.

SUMMARY

The proposed rules provide that electric utilities must purchase electric energy and capacity made available by qualifying cogenerators and small power producers at a rate reflecting the cost that the purchasing utility can avoid as a result of obtaining energy and capacity from these sources, rather than generating an equivalent amount of energy itself or purchasing the energy from other suppliers. To enable potential cogenerators and small power producers to be able to estimate these avoided costs, the rules require electric utilities to furnish data with regard to present and future costs of energy and capacity on their systems.

These rules also provide that electric utilities must furnish electric energy to qualifying facilities on a nondiscriminatory basis, at a rate that is just and reasonable and in the public interest, and must provide certain types of serv-

[1] The Staff discussion paper in Docket No. RM79-55 concerned subjects also addressed in this proposed rulemaking. Since interested persons may submit comments in response to this rulemaking, the deadline for the filing of comments on the Staff discussion paper was not extended beyond the original deadline of August 1, 1979.

ice which may be requested by qualifying facilities to supplement or back up those facilities' own generation.

The rule exempts all qualifying cogeneration facilities and certain qualifying small power production facilities from rate and certain other regulations under the Federal Power Act, from the provisions of the Public Utility Holding Company Act of 1935 related to electric utilities, and from State laws regulating electric utility rates and financial organization.

The implementation of these rules is reserved to the State regulatory authorities and nonregulated electric electric utilities. Within one year of the issuance of the Commission's rules, each State regulatory authority or nonregulated utility must implement these rules. That implementation may be accomplished by the issuance of regulations, on a case-by-case basis, or any other means reasonably designed to give effect to the Commission's rules.

The Commission observes that this rulemaking represents an effort to evolve concepts in a newly developing area within rigid statutory constraints. The Commission is attempting to afford broad discretion to the State regulatory authorities and nonregulated electric utilities in recognition of the variety of institutional, economic, and local circumstances which may be affected by this proposed rulemaking. In this regard, the Commission seeks the fullest range of comments on the legal authority of proposed Commission action, and on the technical and practical aspects of the proposals set forth in this rulemaking.

SECTION-BY-SECTION ANALYSIS

SUBPART A—*Arrangements Between Electric Utilities and Qualifying Cogeneration and Small Power Production Facilities under Section 210 of the Public Utilities Regulatory Policies Act of 1978.*

§ 292.101 *Scope.*

Section 292.101(a) describes the scope of Subpart A of Part 292 of the Commission's rules. Subpart A applies to sales and purchases of electric energy and capacity between qualifying cogeneration and small power production facilities and electric utilities, and actions related to such sales

and purchases. Section 292.101(b) provides that the authority of this subpart does not preclude negotiated agreements between qualifying cogenerators or small power producers and electric utilities which differ from rates or terms which would otherwise be required under this subpart. Paragraph (b)(1) reflects the Commission's view that the rate provisions of section 210 of PURPA apply only if a qualifying cogenerator or small power producer chooses to avail itself of the rights and protections set forth in that section. An agreement between an electric utility and a qualifying cogenerator or small power producer to conduct sales or purchases at rates higher or lower, or under terms or conditions different from those set forth in these rules, does not violate the Commission's rules under section 210 of PURPA. Nor would provisions of State law or regulations which provide different incentives for small power production and cogeneration (than are provided in the Commission's rules) be preempted. The Commission recognizes that the ability of a qualifying cogenerator or small power producer to negotiate with an electric utility is buttressed by the existence of the statutory rights and protections of these rules, and the right of State regulatory agencies and nonregulated electric utilities to provide further encouragement fo these technologies.

If, prior to the existence of the rights and protections set forth in PURPA, a cogenerator or small power producer entered into a contractual agreement by which he received sufficient financial incentive to sell his electric output to a utility, the encouragement of cogeneration or small power production does not require that he be given additional incentives. Accordingly, paragraph (b)(2) provides that Subpart A will not affect the validity of any contract between a qualifying cogenerator of small power production facility and an electric utility. At the expiration of the contract, a cogenerator or small power producer will be able to avail himself of these rules.

§ 292.102 *Definitions.*

This section contains definitions applicable to Subpart A.

Paragraph (a) provides that terms defined in PURPA have the same meaning as they have in PURPA, unless further defined in this part of the Commission's regulations.

Subparagraph (1) defines a qualifying facility as a cogeneration or small power production facility which is a qualifying facility under § 292.208 of the Commission's regulations. Those regulations implement section 201 of PURPA, and are the subject of Docket No. RM79-54.

Subparagraph (2) defines "purchase" as the purchase of electric energy or capacity from a qualifying facility by an electric utility.

Subparagraph (3) defines "sale" as the sale of electric energy or capacity by an electric utility to a qualifying facility.

Subparagraph (4) defines "system emergency" as a condition on a utility's system which is likely to result in disruption of service to a significant number of customers or is likely to endanger life or property.

Subparagraph (5) defines "rate" as any price, rate charge, or classification made, demanded, observed, or received with respect to the sale or purchase of electric energy or capacity, or any rule, regulation, or practice respecting any such rate, charge, or classification, and any contract pertaining to the sale or purchase of electric energy or capacity.

Subparagraph (6) defines "avoided costs" as the costs to an electric utility of energy or capacity or both which, but for the purchase from a qualifying facility, the electric utility would generate or construct itself or purchase from another source. This definition is derived from the concept of "the incremental cost to the electric utility of alternative electric energy" set forth in section 210(d) of PURPA. It includes both the fixed and the running costs on an electric utility system which can be avoided by obtaining energy or capacity from qualifying facilities.

The costs which an electric utility can avoid by making such purchases generally can be classified as "energy" costs or "capacity" costs. Energy costs are the variable costs associated with the production of electric energy (kilowatthours). They represent the cost of fuel, and some operating

and maintenance expenses. If, by purchasing electric energy from a qualifying facility, a utility can reduce its energy costs or can avoid purchasing energy from another utility, the rate for a purchase from a qualifying facility is to be based on those energy costs which the utility can thereby avoid.

Capacity costs are the costs associated with providing the capability to deliver energy; they consist primarily of the capital costs of facilities. If a qualifying facility offers energy of sufficient reliability and with sufficient legally enforceable guarantees of deliverability to permit the purchasing electric utility to avoid the need to construct a generating unit, to enable it to build a smaller, less expensive plant, or to purchase less firm power from another utility, then the rates for such a purchase will be based on the net avoided capacity and energy costs.[2]

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[2] "Net avoided costs" are the excess of the total costs of the system developed in accordance with the utility's optimum capacity expansion plan, excluding the qualifying facility, over the system's total costs (before payment to the qualifying facility) developed in accordance with the utility's optimum capacity expansion plan including the qualifying facility. This concept recognizes that the energy cost associated with a deferred or avoided unit may be different from the energy costs of the qualifying facility which permitted that deferral or avoidance. In determining an optimum capacity expansion plan, a utility must consider both capacity and energy costs in order to minimize the anticipated total system costs. In providing for payments for avoided capacity, the Commission uses the term "net avoided cost" in recognition of the fact that various types of capacity will not produce the same amount of energy, so that some change in the dispatch of generation may be necessary from the remaining plants after a planned unit is deferred and the qualifying facility's capacity is substituted along with other available capacity to produce the same amount of energy at the minimum cost. This is particularly true, for example, where the capacity factor for the qualifying facility is less than the planned capacity factor from a base load (high capacity cost—low energy cost) alternative facility which is deferred. In such a case, although adequate capacity may exist on the system due to the purchase from the qualifying facility in lieu of the deferred base load unit, additional energy costs may be incurred due to increased generation from intermediate plants to make up the difference between the planned generation from the base load plant and the lesser total energy produced by the qualifying facility. Such increased energy cost is appropriately recognized by providing

There is considerable language in both the statute and the Conference Report, as well as the Federal Power Act, in support of the proposition that capacity payments are not only legally permitted to be required by the Commission, but also, at least in some circumstances, mandated.

The Conference Report addresses the calculation of the alternative cost standard at some length. The final paragraph of this section of the Report is the following:

> The conferees expect that the Commission, in judging whether the electric power supplied by the cogenerator or small power producer will replace future power which the utility would otherwise have to generate itself either through existing capacity or additions to capacity or purchase from other sources, will take into account the reliability of the power supplied by the cogenerator or small power producer by reason of any legally enforceable obligation of such cogenerator or small power producer to supply firm power to the utility.[3]

The references to "additions to capacity" and to obligations "to supply firm power" (the rates for which, in this Commission's experience, always include a capacity component) lead the Commission to the conclusion that, under Section 210, capacity payments to qualifying facilities can be required under certain circumstances; and that a utility's refusal to make payments based in part on avoided capacity payments could be discriminatory.

In addition, the Commission notes that the statutory language used in the Federal Power Act uses the term "electric energy" to describe the rates for sales for resale in interstate commerce. Demand or capacity rates are a traditional part of such rates. The term "electric energy" is used throughout the Act to refer both to electric energy and capacity. The Commission does not find any evidence that the term "electric energy" in section 210 of PURPA was in-

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for the payment to the qualifying facility of the *net* avoided costs. In this way, the ratepayers are assured of paying no more than the total costs that would have been incurred had the unit not been deferred.

[3] Conference Report on H.R. 4018, Public Utilities Regulatory Policies Act of 1978, H. Rep. No. 1750, 99, 95th Cong., 2d Sess. (1978)

tended to refer only to fuel and operating and maintenance expenses, instead of all of the costs associated with the provision of electric service.

To interpret this phrase to include only the energy would lead to the conclusion that the rates for sales to qualifying facilities only include the energy component of the rate. It is the Commission's belief that this was not the intended result, and thus provides an additional reason to interpret the phrase electric energy to include both energy and capacity.

§ 292.103 *Availability of Electric Utility System Cost Data.*

In order to be able to evaluate the financial viability of a cogeneration or small power production facility, an investor needs to be able to ascertain, before construction of a facility, the expected return on a potential investment. This return will be determined in part by the price at which the qualifying facility can sell its electric output. Under § 292.105 of these rules, the rate at which a utility must purchase that output is based on the utility's avoided costs.

In order to provide data to qualifying facilities which will assist them in determining the utility's avoided costs, § 292.103(b) of the rules requires electric utilities to make available to cogenerators and small power producers data concerning the present and anticipated future costs of energy and capacity on the utility's system. The data required to be provided to determine these avoided costs will have been prepared in compliance with the Commission's rules implementing section 133 of PURPA.[4] This section will thus, for the most part, require a table presenting data already developed.

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[4] For example, § 290.303(h) of the Commission's rules implementing section 133 of PURPA requires such electric utilities to report marginal energy costs for each month of the reporting period and for each month of the next five years. Section 290.302(g) of these rules requires electric utilities to report the estimated cost, in dollars per kilowatt of generation, of generation units likely to be installed to meet increases in peak demand. Section 290.302(f) requires the reporting of estimates, for the next ten years of information regarding total system capacity, and capacity to be supplied by other utilities.

Section 133 of PURPA applies to each electric utility whose total sales of electric energy for purposes other than resale exceeded 500 million kWh during any calendar year beginning after December 31, 1975, and before the immediately preceding calendar year. (The phrase "before the immediately preceding calendar year" refers to the year two years prior to the current year. For example, if an electric utility exceeded the 500 million kWh limit both during 1976 and 1979, it must comply with section 133 requirements in 1981.) Section 290.102(d) of the Commission's rules implementing section 133 of PURPA granted an extension until June 30, 1982,[5] to electric utilities covered by that section having total sales of energy for purposes other than resale of less than 1 billion kWh in each of the calendar years 1976, 1977, and 1978.

The proposed coverage under paragraph (a) of these regulations is the same as that provided pursuant to section 133 of PURPA and the Commission's rules implementing that section, with an exception provided in paragraph (c) as will be discussed.

Paragraph (b) provides that each regulated electric utility must furnish to the State regulatory authority, and maintain for public inspection, data related to the costs of energy and capacity of the electric utility's system. Each nonregulated electric utility must maintain such data for public inspection.

Subparagraph (1) requires each electric utility to provide the estimated avoided cost of energy on its system for various levels of purchases from qualifying facilities. The levels of purchases are to be stated in blocks of one hundred megawatts or less for systems with peak demand of 1000 megawatts or more, and in blocks equivalent to not more than ten percent of system peak demand for systems less than 1000 megawatts. This information is to be stated

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[5] Docket No. RM79-6, issued June 5, 1979, granted an extension until May 31, 1982, to electric utilities having total sales of electric energy for purposes other than resale of less than 1 billion kilowatt-hours in each of the calendar years 1976, 1977, and 1978. The Commission recently issued revised regulations in this docket which extended this date to June 30, 1982.

on a cents per kilowatt-hour basis, for daily and seasonal peak and off-peak periods, for the immediately preceding year, and on an estimated cents per kWh basis for the current calendar year and for each of the next five years.

Subparagraph (2) requires each electric utility to provide its schedule for the addition of capacity, planned purchases of firm energy and capacity, and planned capacity retirements for each of the next 10 years.

Subparagraph (3) requires each electric utility to provide the estimated costs at completion, on the basis of dollars per kilowatt, of planned capacity additions, including planned firm purchases.

Qualifying facilities may wish to sell energy or capacity to electric utilities which are not subject to the reporting requirements of paragraph (b). In that event, paragraph (c) provides that, upon request of a qualifying facility, an electric utility not otherwise covered by paragraph (b) must provide sufficient data to enable the cogenerator or small power producer to determine the utility's avoided costs. If such utility refuses to supply the requested data, the qualifying facility may apply to this Commission for an order requiring that the information be supplied. The Commission, in considering such applications, will take into account the burden on the facility.

A non-generating electric utility which does not own or plan to acquire generating capacity may incorporate the data provided by each of its supplying utilities in its compliance with the provisions of this section.

§ 292.104 *Electric Utility Obligations Under This Subpart.*

Section 210(a) of PURPA provides that the Commission shall prescribe rules requiring electric utilities to offer to purchase electric energy from qualifying facilities. The Commission interprets this provision to impose on electric utilities an obligation to purchase all electric energy and capacity made available from qualifying facilities, except during periods prescribed in § 202.105(e) and during system emergencies.

There are several circumstances in which a qualifying facility might desire that the electric utility with which it is

interconnected not be the purchaser of the qualifying facility's energy and capacity, but would prefer instead that an electric utility with which the purchasing utility is interconnected make such a purchase. If, for example, the purchasing utility is a non-generating facility, its avoided costs will be the price of bulk purchased power ordinarily based on an average figure representing the average cost of energy and capacity on the supplying utility's system. As a result, the rate to the qualifying facility would be based on those average costs. If, however, the qualifying facility's output were purchased by the supplying utility, its output could replace energy supplied by specific peaking units, and its capacity might enable the supplying utility to avoid the addition of new capacity. The costs, and thus the avoided costs, of peaking energy and new capacity are generally greater than system average figures.

Under these proposed rules, certain small electric utilities are not required to provide system cost data, except upon request of a qualifying facility. If, with the consent of the qualifying facility, a small electric utility chooses to transmit energy from the qualifying facility to a second electric utility, the small utility can avoid the otherwise applicable requirements that it provide the system cost data for the qualifying facility and that it purchase the energy itself.

Accordingly, paragraph (d) provides that a utility which receives energy or capacity from a qualifying facility may, with the consent of the qualifying facility, transmit such energy to another electric utility. However, if the first utility does not transmit the purchased energy or capacity, it retains the purchase obligation. Any electric utility to which such energy or capacity is delivered must purchase this energy under the obligations set forth in these rules as if the purchase were made directly from the qualifying facility.[6]

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[6] The Commission notes that while a purchase from a qualifying facility may have value as energy and capacity, what is actually transmitted to the second utility is properly described as electric energy. The utility to which energy is transmitted, however, must pay rates based on energy and capacity value.

The costs of transmission are not a part of the rate which an electric utility to which energy is transmitted is obligated to pay the qualifying facility. These costs are part of the costs of interconnection, and are the responsibility of the qualifying facility under § 292.108 of these rules. However, pursuant to agreement between the qualifying facility and any electric utility which transmits electric energy on behalf of the qualifying facility, the transmitting utility may share the costs of transmission. The electric utility to which the electric energy is transmitted has the obligation to purchase the energy at a rate which reflects the costs that it can avoid as a result of making such a purchase.

Paragraph (b) sets forth the statutory requirement of section 210(a) of PURPA that electric utilities offer to sell electric energy to qualifying facilities. This section creates a Federal right for qualifying facilities to obtain electric service, in addition to any service the electric utility is obligated to provide under State laws.

The State discussion paper dealt with the issue of whether there is inherent in section 210 of PURPA the authority to order interconnections between electric utilities and qualifying facilities, or whether qualifying facilities must use the procedures set forth in the new sections 210 and 212 of the Federal Power Act to gain interconnection.[7] The Commission believes that the requirement to interconnect is within the legal authority to the Commission under section 210 of PURPA, particularly subsumed within the requirement to buy and sell. To hold otherwise would mean that Congress intended to have qualifying facilities go through an extended and expensive proceeding simply to gain interconnection, contrary to the entire thrust of sections 201 and 210 of PURPA.

These sections evince the clear Congressional intent to encourage development of these desirable forms of generation, and to have the commercial development of these facilities proceed expeditiously. In other words, Congress has already made the judgment that these kinds of facilities serve one of the purposes of the Act as set out in section

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[7] Staff discussion paper, *supra*., at 10-14.

101, *viz*, "the optimization of the efficiency of use of facilities and resources by electric utilities", and it would be both redundant and unduly burdensome to have the sponsors of individual facilities show in an evidentiary hearing conducted under section 210 of the Federal Power Act that their project in particular would serve this end (or one of the other related goals established as criteria for an interconnection order in section 210(c)(2)). The purpose of an interconnection application, whether under section 202 or 210 of the FPA, is to secure service, whether emergency or otherwise; and section 210 of PURPA establishes the entitlement of a qualifying facility to service from the interconnected utility. In effect, the proponents of the view that a qualifying facility must apply under sections 210 and 212 of the FPA have the burden of showing that Congress intended inerconnection and the entitlement to buy and sell be denied to a qualifying facility which is unable to make the showings required by those sections, especially in light of the fact that a previously interconnected customer installing qualifying facilities would not have to so apply.

This is not to say that all of the protections that Congress has given the target of an interconnection application in sections 210 and 212 of the FPA are necessarily absent from section 210 of PURPA. The Conference Report on section 210 states that customers of utilities are not to be compelled to subsidize qualifying facilities, and this principle would seem to bear on the question of who pays the costs of interconnection as well as on the pre-unit price to be paid for energy. On the other hand, the Conference Report includes a proscription against "unreasonable rate structure impediments, such as unreasonable hook up charges." This provides another argument in favor of reading section 210 of PURPA as including interconnection authority, since the elaborate cost determination required under sections 210 or 212 of the FPA is redundant if the costs of interconnection are viewed simply as a feature of the rate structure with the charge therefor based on the cost of the utility. However, the Commission does view section 210 of the FPA as an alternate avenue for remedy available to any qualifying facility which wishes to apply under it.

The obligation to interconnect can be part of either an electric utility's option to purchase from or sell to a qualifying facility. With regard to the obligation to sell, State law ordinarily sets out the obligation of an electric utility to provide service to customers located within its service area. The Commission believes that State law will normally impose on an electric utility the obligation to interconnect and that the Commission's proposal will not, in most instances, impose any additional obligation on electric utilities.

As noted in the Staff discussion paper, by installing certain equipment, an electric utility can be protected from disruption of its operations caused by a qualifying facility. The Commission has not received comments which disagree with this understanding. Therefore, through the allocation of the costs associated with such equipment to the qualifying facilities, as provided in § 292.109, and through the imposition of standards for operating reliability under § 292.110, appropriate physical and financial protection for the electric utilities is provided in the Commission's proposed rules.

Several commentators urged that the Commission require electric utilities to offer to operate in parallel with a qualifying facility. By operating in parallel, a qualifying facility is enabled automatically to export any electric energy which is not consumed by its own load. Therefore, provided that the qualifying facility complies with the standards set forth in § 292.110 regarding operating reliability, the Commission proposes in paragraph (e) that electric utilities be required to offer to operate in parallel with a qualifying facility.

§ 292.105 *Rates for Purchases*

Section 210(b) of PURPA provides that in requiring any electric utility to purchase electric energy from a qualifying facility, the Commission must insure that the rates for such purchases be just and reasonable to the electric consumers of the purchasing utility, in the public interest, nondiscriminatory to qualifying facilities, and that they not exceed the

incremental costs of alternative electric energy (the costs of energy, which, but for the purchase, the utility would generate from another source).

Types of Purchases

In implementing this statutory standard, it is helpful to review industry practice respecting sales between utilities. Sales of electric power are ordinarily classified as either firm sales, where the seller provides power at the customer's request, or non-firm power sales, where the seller and not the buyer makes the decision whether or not power is to be available. Rates for firm power purchases include payments for the cost of fuel and operating expenses, and also for the fixed costs associated with the construction of generating units needed to provide power at the purchaser's discretion. The degree of certainty of deliverability required to constitute "firm power" can ordinarily be obtained only if a utility has several generating units and adequate reserve capacity. The capacity payment, or demand charge, will reflect the cost of the utility's generating units and the associated costs of assuring that firm power will be available on demand.

In contrast, the ability to provide electric power at the selling utility's discretion imposes no requirement for the construction of capacity on the seller. In order to provide power to customers at the seller's discretion, the selling utility needs only to provide for the cost of operating its generating units. These costs, called "energy" costs, ordinarily are the ones associated with non-firm sales of power.

Purchases of power from qualifying facilities will fall somewhere on the continuum between these two types of electric service. Thus, for example, wind machines that furnish power only when wind velocity exceeds twelve miles per hour may be so uncertain in availability of output as only to permit a utility to avoid generating an equivalent amount of energy. The utility must continue to provide capacity that is available to meet the needs of its customers. Rates for such sporadic purchases should thus be based on utility system's avoided incremental cost of energy (system lambda), and not based on avoided capacity.

On the other hand, photovoltaic cells, although subject to some uncertainty in power output, have the general advantage of providing their maximum power coincident with the system peak when used on a summer peaking system. The value of such power is greater to the utility than power delivered during off-peak periods. Since the need for capacity is based on system peaks, the qualifying facility's coincidence with the system peak should be reflected in the allowance of some capacity value and an energy component that reflects the avoided energy costs at the time of the peak.

A facility burning municipal waste or biomass can operate more predictably and reliably than solar or wind systems. It can schedule its outages during times when demand on the utility's system is low. If such a unit demonstrates a degree of reliability that would permit the utility to defer or avoid construction of a generating unit or the purchase or firm power from another utility, then the rate for such a purchase should be based on the avoidance of both energy and the capacity costs.

In order to be able to defer or cancel the construction of new generating units, a utility must obtain a commitment, sufficiently ahead of the lead time for the construction of its own new capacity, that provides contractual or other legally enforceable assurances that capacity from alternative sources will be available. If a qualifying facility makes such a commitment, the Commission believes that, as a matter of both policy and interpretation of section 210, the qualifying facility is entitled to receive rates based on the utility's avoided costs resulting from the capacity of qualifying facility supplies. Moreover, if a cogenerator or small power producer were permitted to receive only the energy (fuel, and operating and maintenance) expenses which the purchasing utility can avoid—while the cogenerator or small power producer must himself invest in new, and often highly capital-intensive, machinery—these potential sources of energy may go undeveloped. In light of the Commission's statutory obligation to encourage cogeneration and small power production, the Commission believe that a proper interpretation of "the incremental costs of alternative electric

energy" requires that, when purchases of energy can substitute for intermediate, or base-load, the rate to the cogenerator or small power producer include the net avoided capacity and energy costs.

If a qualifying facility opts to receive rates based on avoided energy costs, such rates should reflect the energy costs of the electric utility's units which otherwise would have been operated. The Commission believes that there are a variety of acceptable ways to carry out this policy at the State level. The general concept here is that rates for purchases from the qualifying facility would be based on the highest energy cost unit then operating. The qualifying facility would continue to be dispatched until the cost of energy costs is lower than the price at which the qualifying facility wishes to sell.

The Commision neither expects nor requires that the determination of utilities' avoided costs will be so precise. By definition, these costs are based on estimates of costs which would be incurred if certain events were to take place. Electric rates are ordinarily calculated on the basis of averaging. So long as a rate for purchases reasonably accounts for the avoided costs, and does not fail to provide the required encouragement of cogeneration and small power production, it will be considered as implementing these rules.

Paragraph (a) therefore provides that the statutory requirements regarding rates for purchases of energy and capacity from a qualifying facility as satisfied if the rates reflects the avoided costs resulting from such a purchase as determined on the basis of the cost of energy and capacity set forth pursuant to § 292.103(b) or (c).

Method of Implementation

The Commission is required under section 210 of PURPA to prescribe rules requiring electric utilities to offer to sell electric energy to and purchase elecric energy from qualifying facilities. Paragraphs (b) and (c) of section 210 set forth the standards regarding the rate at which such purchases and sales shall be made. The implementation of Commission rules promulgating these standards is reserved

to the State regulatory authorities and nonregulated utilities,which are required under section 210(f) to implement the Commission's rules.

One major area of concern expressed in comments received from electric utilities, cogenerators and small power producers, and State regulatory authorities has been that the Commission's rules should state general principles sufficient to leave the states and non-regulated utilities flexibility.[8] The basis for this recommendation is the need for experimentation in a new technological area and in an area that is subject to a variety of State procedures, the diverse nature of cogeneration and small power production systems, and the differences in the costs of energy and capacity on individual electric systems. As a result, while we herein propose that, for example, capacity costs must be paid if a utility can actually avoid the construction or purchase of capacity, our rules will not dictate the method by which such a payment is to be determined. Rather the Commission proposes to leave the selection of a methodology to the States and nonregulated electric utilities, with the understanding that should a State or nonregulated utility not fulfill the intent and purposes of our rules and of section 210 of PURPA, the Commission and others have available the enforcement power set forth in section 210(h) of PURPA to assure compliance. Additionally, the Commission is authorized to revise these rules in the future to provide greater specificity to these rules if that is necessary.

Paragraph (b) requires electric utilities, on request of a qualifying facility, to promulgate a tariff or other method for establishing rates for purchases from qualifying facilities of ten kilowatts or less. In Docket No. RM79-54 the Commission proposed a minimum size limitation for qualifying facilities of ten kilowatts. However, comments received in response to that proposed rulemaking indicate that such a limitation could hamper the development of

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[8] Comments of American Electric Power, filed August 1, 1979, at 2-3; Comments of Electric Consumer Resource Council (ELCON), filed August 1, 1979, at 6; Comments of the National Association of Regulatory Utility Commissioners (NARUC), filed August 1, 1979, at 2-5.

auxiliary solar and wind power units. Without finally determining that question in this rulemaking, it appears to the Commission that the burden of interconnected operation on both utilities and qualifying facilies can be minimized if standard tariffs are used.

Some utilities already have such tariffs in effect. For units of ten kilowatts or less, it is likely that few changes in the utility's distribution system would be required. For example, an electric utility might offer to permit certain customers to reverse their electric meters, thus permitting consumption by the customer. While the Commission will deal more extensively with the matter of a size limtiation for qualifying facilities in its final rule in Docket No. RM79-54, the Commission solicits comment here on the merits of requiring utilities to promulgate tariffs for qualifying facilities of ten kilowatts or less.

Paragraph (c) concerns a problem arising in the implementation of the concept of avoided costs. At the time that a qualifying facility delivers electric energy to an electric utility, that utility can determine its system lambda and thus calculate the costs it can avoid by making the purchase. Subparagraph (1) therefore provides rates for purchases made on an "as available" basis may be based on the purchasing utility's avoided energy costs.

In order to establish certainty of future revenue, a qualifying facility might seek to obtain a contract from a utility providing that the utility will pay a certain price for energy from a qualifying facility, under specified terms and conditions. Indeed, a qualifying facility desiring to obtain capacity credit must provide the purchasing utility with assurances that such capacity will continue to be available.

In the case of future purchases pursuant to a legally enforceable obligation, the utility's avoided energy or capacity costs may be based on the costs of production facilities which are not built and for which the only available cost data are estimates. When the qualifying facility actually supplies electricity, the utility's avoided costs may deviate from these estimated figures. The Commission believes that these potential deviations are a normal result of risk allocation resulting from contractual commitments or other

legal obligations, and believes that they must be permitted if the Commission is to fulfill its mandate to encourage cogeneration and small power production. Accordingly, subparagraph (2) provides tha rates for such purchases may be based on future estimated utility costs of energy or capacity regardless of whether these estimated costs actually track the actual costs that are incurred.

Paragraph (d) sets forth factors on the basis of which the State regulatory authority or nonregulated utility should determine a utility's avoided costs. These principles relate both to the quality of power available from the qualifying facility and its ability to displace or replace energy and capacity on the utility's system.

Subparagraph (1) deals with the availability of capacity from a qualifying facility during system daily and seasonal peak periods. If a qualifying facility can provide energy to a utility during peak periods when the electric utility is running its most expensive generating units, this energy has a higher value to the utility than energy supplied durng off-peak periods during which only units with lower running costs are operating. Ideally, the rates for purchases would reflect the cost in the purchasing utility s system at the precise moment when such energy is supplied. The metering equipment that would be required to ascertain these times of delivery with the requisite specificity may be either unavailable or prohibitively expensive. To the extent that such metering equipment is available, however, the State or nonregulatory utility should take into account the time at which the purchase from a qualifying facility is made.

Clauses (i), (ii), (iii), (iv), and (v) deal with the reliability of a qualifing facility. When an electric utility provides power from its own generating units or from those of another electricity utility, it normally controls the production of such power from a central location. The ability to so control power production enhances a utility's ability to respond to changes in demand and thereby enhances the value of that

power to the utility. A qualifying facility may be able to enter into an arrangement with the utility which gives the utility the advantage of dispatching the facility.[9]

Clause (ii) refers to a qualifying facility's ability and willingness to provide power and energy during system emergencies. Section 292.109 of these proposed regulations concerns the provision of electric service during system emergencies. It provides that, to the extent that a qualifying facility is willing to forego its own use of energy during sytem emergencies and provide power to a utility's system, the rate for purchases from the qualifying facility should reflect the value of that service. Small power production and cogeneration facilities could provide significant back-up capability to electric systems during emergencies. One benefit of the encouragement of interconnected cogeneration and small power production may be to increase overall system reliability during such emergency conditions. Any such benefit should be reflected in the rate for purchases from such qualifying facilities.

Clause (iii) deals with periods during which a qualifying facility is unable to provide power. Electric utilities schedule maintenance outages for their own generating units at periods during which demand is low. If a qualifying facility can similarly schedule its maintenance outages during periods of low demand, or during periods in which a utility's capacity will be adequate to handle existing demand, it will enable the utility to avoid the necessity to provide redundant capacity. With regard to forced or unscheduled outages, addressed in clause (iv), it is clear that a utility cannot avoid the construction or purchase of capacity if it is likely that the qualifying facility which would replace such capacity may go out of service during the period when the utility needs its power to meet demand. Based on estimated and demonstrated reliability of the qualifying facility, the rate for purchases from a qualifying facility should be adjusted to reflect its forced and scheduled outage rate.

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[9] See comments of Hawaiian Electric Company, filed July 27, 1979, at 2.

Subclause (v) refers to the length of time during which the qualifying facility has contractually or otherwise guaranteed that it will supply energy or capacity to the electric utility. A utility-owned generating unit normally will supply power for the life of the plant, or until it is replaced by more efficient capacity. In contrast, a cogeneration or small power production unit might cease to produce power as a result of changes in the industry or in the industrial processes utilized. Accordingly, the value of service from the qualifying facility to the electric utility will be affected by the degree to which the qualifying facility contractually insures that it will continue to provide power. In order to provide capacity value to an electric utility a qualifying facility need not necessarily agree to provide power for the life of the plant. A utility's generation expansion plans normally include temporary purchases of firm power from other utilities in years preceeding the addition of a major generation unit. If a qualifying facility contracts to deliver power, for example, for a one year period, it may enable the purchasing utility to avoid entering into a bulk power purchase arrangement with another utility. The rate for such a purchase should thus be based on the price that such power is purchased, or can be expected to be purchased, based upon bona fide offers from another utility.

Subparagraph (2) concerns the relationship of energy or capacity from a qualifying facility to the purchasing electric utility's need for such energy or capacity. If an electric utility has sufficient capacity to meet its demands and is not planning to add any new capacity to its systems, then the availability of capacity from qualifying facilities will not immediately enable the utility to avoid any capacity costs.[10] This is not to say that electric utilities with systems which have excess capacity need not make purchases from qualifying facilities; qualifying facilities may obtain payment for the avoided energy costs on a purchasing utility's system. Utility systems with excess capacity normally have intermediate or peaking units which use fossil fuel. As a result,

[10] Such availability may, however, permit the utility to advance the retirement of its least effective units.

during peak hours the energy costs on the system are high, and thus the rate to a qualifying utility from which the electric utility purchases energy should similarly be high. In addition, an electric utility system with excess capacity may nevertheless plan to add new, more efficient capacity to its system. If purchases from qualifying facilities enable a utility to defer or avoid these new planned capacity additions the rate for such purchases should reflect the avoided costs of these additions.

Clause (i) of subparagraph (2) refers to the aggregate capability of capacity from qualifying facilities to displace existing or planned utility capacity. In some instances, the small amounts of capacity provided from qualifying facilities taken individually might not enable a purchasing utility to defer or avoid scheduled capacity additions or purchases. The aggregate capability of such purchases may, however, be sufficient to permit the deferral or avoidance of a capacity addition. Moreover, while an individual qualifying facility may not provide the equivalent of firm power to the electricity utility, the diversity of these facilities may collectively reflect the equivalent of firm power. The States and nonregulated utilities should attempt to devise rate mechanisms which will appropriately compensate qualifying facilities whose aggregate capacity enables the purchasing utility to defer or avoid capacity additions.

Clause (ii) refers to the fact that the lead time associated with the addition of capacity from qualifying facilities may be less than the lead time that would have been required if the purchasing utility had constructed its own generating unit. Such reduced lead time might produce savings in the utility's total power production cost.

Subparagraph (3) addresses the cost or savings resulting from line losses. In determining an appropriate rate for purchases from a qualifying facility the rate should reflect the cost savings actually accruing to the electric utility. If energy produced from a qualifying facility undergoes line losses such that the delivered power is not equivalent to the source of power it replaces, then the qualifying facility should be reimbursed only for the equivalent amount. If the load served by the qualifying facility is closer to the quali-

fying facility than it is to the utility, it is possible that there may be net savings resulting from reduced line losses. In such cases, the rates should be adjusted upwards.

Subparagraph (4) provides that an electric utility will not be required to purchase energy and capacity from qualifying facilities during periods in which such purchases might result in net increased operating costs to the electric utility. Identification of these periods will be made by the State regulatory authority which has jurisdiction over the utility or by the nonregulated electric utilities. Comments received in response to the Staff discussion paper noted that if, for example, during low load periods, a utility were operating a nuclear plant as its most expensive unit, and were forced to cut back output from such a unit in order to accommodate a purchase from a qualifying facility, the utility would experience increased costs in increasing the output from the nuclear facility when the system demand increases.[11]

Thus, because the avoided cost is zero or actually involves expense to the utility, requiring the utility to purchase energy from a qualifying facility during such a period would not be just and reasonable to the consumers of the electric utility, because it would result in increased costs to the system's rate payers. Under the propsoed § 292.104(a) an electric utility would not be required to make energy purchases during such a period.

Tax Issues

The Statement of the Committee of Conference states that

> ...the examination of the level of rates which should apply to the purchase by the utility of the cogenerator's or the small power producer's power should not be burdened by the same examination as are utility rate applications to determine what is the just and reasonable rate that they should receive for their electric power.

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[11] Comments of Commonwealth Edison Company, filed August ., 1979 at 4.

We note that section 301(b)(2) of the Energy Tax Act of 1978[12] made eligible for increased business investment tax credit certain property that may be used by small power producers or cognerators. However, section 301(b)(2)(B) excludes from such eligibility property "which is public utility property (within the meaning of section 46(f)(5) of the Internal Revenue Code of 1954)."[13] As a result, if a qualifying facility were to be classified as a public utility under section 46(f)(5) of the Internal Revenue Code, it would not be eligible for the increased investment tax credit otherwise available.

The Commission notes that a recent change[14] in Treasury Department regulations amended the definition of the exclusion "public utility property" for purposes of eligibility for the investment tax credit so as to exclude [from the definition] property used in the business of the furnishing or sale of electric energy if the rates are not subject to regulation that fixes a rate of return on investment. Prior to the change, any rate regulation made property subject thereto (and involved in the furnishing or sale of energy) public utility property.

The Commission observes that the rates for purchases set forth in this rulemaking for purchases of energy from qualifying facilities are *not* based on a rate of return on investment. As a result, the Commission believes that property owned by qualifying facilities should not be classified as public utility property under section 46(f)(5) of the Internal Revenue Code of 1954. If such property is not classified as public utility property, the qualifying facility will be eligible to receive the additional investment tax credit set out in section 301(b) of th Energy Tax Act of 1978. The Commission wishes to express its opinion on this matter in an effort to further encourage cogeneration and small power production by means of this rulemaking process.

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[12] Pub. L. No. 95-618, 26 U.S.C. §§ 46, 48, November 9, 1978.

[13] 26 U.S.C. § 48 (e)(3)(b).

[14] Treasury Reg. § 1.46-3(g)(2), T.D. 7602 (March 23, 1979).

§ 292.106 *Rates for Sales.*

Section 210(c) of PURPA provides that the rules requiring utilities to sell electric energy to qualifying facilities shall ensure that the rates for such sales are just and reasonable, in the public interest, and nondiscriminatory against qualifying cogenerators or small power producers. As noted in the Staff discussion paper,[15] this section contemplates rates formulated on the basis of traditional ratemaking (*i.e.*, costs of service) concepts.

Paragraph (a) provides that rates for sales from electric utilities to qualifying facilities shall not be discriminatory against such facilities in comparison to rates to other customers served by the electric utility. Paragraph (a) also states that such rates shall be just and reasonable and in the public interest.

The qualifying facility is entitled to purchase back-up or standby power at a rate which reflects the probability that the qualifying facility will or will not contribute to the need for utility capacity and the use of utility capacity.[16] Thus, when the utility must reserve capacity to provide service to a qualifying facility, the costs associated with that reservation are properly recoverable from the qualifying facility if the utility would assess these costs to non-generating customers.[17]

Paragraph (b) provides that electric utilities must provide to qualifying facilities any services which would be provided by the electric utility to a retail customer who does not have his own generation.

Normally the determination of an appropriate rate to a class of customers is based on an examination of load data relating to such customers. At this time, however, even those utilities which have good load data regarding existing customer classes do not have load data regarding usage by

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[15] Staff discussion paper, *supra*, at 14-20.

[16] Comments of ELCON (Electricity Consumer Resource Council), filed August 1, 1979, at 5.

[17] Comments of Consumers Power Company, filed August 1, 1979, at 3.

qualifying cogeneration and small power production facilities. Until such data is collected, the Commission believes that rates for sales to qualifying facilities should be at least as favorable as those available to utility customers having comparable load characteristics or falling under simmilar load classifications.

Paragraph (c) sets forth certain types of service which electric utilities are required to provide to qualifying facilities even if such types of service are not provided to other customers. These types of service are: supplementary power, back-up power, interruptible power, and maintenance power. The Commission believes that this requirement is necessary to encourage small power production and cogeneration.

Supplementary power is power used by a facility in addition to that which it ordinarily generates on its own. Thus, a cogeneration facility with a capacity of ten megawatts might require five more megawatts from a utility on a continuing basis to meet its electric load of fifteen megawatts. The five megawatts supplied by the electric utility would normally be provided as supplementary power.

Back-up power is power available to replace power generated by a facility's own generation equipment. In the example provided above, a cogeneration facility might contract with an electric utility for the utility to have available ten megawatts, should the cogenerator's units experience an outage.

Interruptible power is power supplied by a utility on an "as available" basis. Because interruptible power normally is sold at a lower rate, a qualifying facility may wish to cease operations when utility power is interrupted rather than pay the higher rate necessary to assure firm supplementary supplies.

Maintenance power is supplied during scheduled outages. By prearrangement, a utility can agree to provide such power during periods when the utility's other loads are low, thereby avoiding the imposition of large demands on the utility during peak periods.

Paragraphs (d)(1) and (d)(2) provide that rates for sales of back-up or maintenance power shall not be based on the

assumption that forced outages or other reductions in output by each qualifying facility on an electric utility's system will occur simultaneously or on the assumption that they will occur during the system peak. Like other customers, qualifying facilities have intraclass diversity. In addition, because of the variations in size and load requirements among various types of qualifying facilities, such facilities will have interclass diversity.

The effect of such diversity is that an electric utility supplying back-up or maintenance power to qualifying facilities will not have to plan for reserve capacity to serve such facilities on the assumption that every facility will use power at the same moment. The Commission believes that probabilistic analysis of their demand will show that a utility need not reserve capacity on a one-to-one basis to meet back-up requirements. Paragraphs (d)(1) and (d)(2) prohibit utilities from basing rates on the unsupported assumption that qualifying facilities will impose demands simultaneously and at system peak.

Paragraph (d)(3) provides that rates for sales from an electric utility to a qualifying facility shall take into account the extent to which a qualifying facility has coordinated periods of scheduled maintenance with an electric utility. If a qualifying facility coordinates periods of outage with an electric utility the demand that the qualifying facility imposes on the utility's system will not create capacity requirements to the same extent that such a demand would create if the utility were required to provide such service without prior notice.

§292.107 *Simultaneous Purchase and Sale.*

Section 292.107 deals with the situation referred to in the Staff discussion paper in which a cogenerator or small power producer desires to sell all of its output to a utility and purchase all of its needs from the utility simultaneously. As observed in the Staff discussion paper, an efficient use of society's resources requires that when there is a need for additional capacity, and a utility's customer can construct a new plant more cheaply than the utility can, he should be

encouraged to do so.[18] A qualifying facility may have previously used a portion of its electric output to supply its own power needs. That it chose to generate its own electric power, rather than purchase such power from an electric utility, indicates that there were sufficient economic incentives to so act. To permit such a facility to sell that portion of its electric output to the utility at the utility's avoided costs and replace that electricity from the electric utility at non-incremental (and presumably lower) rates would increase the purchased power costs of the purchasing utility and thus would increase the rates charged to the utility's other customers. The Commission believes that it is not necessary to the encouragement of cogeneration and small power production that a qualifying facility be permitted to obtain avoided cost-based rates for this portion of its electric output. Accordingly, the Commission proposes that for energy generated by a new facility or by capacity installed after the date of issuance of these rules, a qualifying facility be permitted to sell its output at rates established under the section 210(b) of PURPA pricing mechanism while simultaneously purchasing electric energy from a utility pursuant to its retail rate schedules.

§ 292.108 *Costs of Interconnection*

Paragraph (a) defines "interconnection costs" as the reasonable costs of connection, switching, metering, transmission, safety provisions and other costs to an electric utility resulting from interconnected operation between an electric utility and a qualifying facility.

Paragraph (b) states that each qualifying facility must reimburse any electric utility which purchases capacity or energy from the qualifying facility for any interconnection costs. These costs are limited to the net increased costs imposed on an electric utility compared to those it would have incurred had it generated the energy itself or purchased an equivalent amount of energy or capacity from another source.

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[18] Staff discussion paper, *supra* at 24-25.

If, with the consent of a qualifying facility, an electric utility elects to transmit energy from the qualifying facility to another electric utility, the costs of transmission constitute interconnection costs as defined in this paragraph. Under paragraph (b), these costs must be borne by the qualifying facility unless the transmitting utility agrees to share them.

The cost responsibility of the qualifying facility was well summarized in comments by The Southern Company:

> We believe that the interconnection costs which should be addressed in the rules are those incremental costs that go beyond the cost to the system for connecting a normal (i.e., no generation) customer. These costs will include the additional relaying, switching, metering, line, and protective equipment—inclusive of equipment changeout cost—required in the general vicinity of the facility because of the customer's generation. Recognition must be given to the fact that protection goes beyond the protection of equipment and personnel of the qualifying facility and utility. The rules also must provide for the protection of other customers of the utility that may be affected by the operation of the qualifying facility.[19]

Thus, it is only the additional costs which result from interconnected operation for which the qualifying facility is responsible; if the utility would have provided retail service to the customer, those expenses may not be assessed against the qualifying facility merely because the facility is also supplying power and energy. If, however, as a result of the qualifying facility's export of power, the utility is required to install additional switching, safety or other equipment, the qualifying facility is responsible for those expenses.

Paragraph (e) provides that a qualifying facility must reimburse an electric utility which sells capacity or energy to the qualifying facility for interconnection costs resulting from such sale. Ordinarily, the service obligation of an electric utility will contain standard procedures for the allocation of interconnection costs between a retail customer and

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[19] Comments of the Southern Company, filed July 30, 1979, at 5.

the electric utility. Paragraph (c) also provides that interconnection costs to qualifying facilities shall not be discriminatory in relation to the practices of the electric utility with regard to other retail customers.

§ 292.109. *System Emergencies.*

Paragraph (a) provides that, except as provided under section 202(c) of the Federal Power Act or pursuant to a contract or agreement between a qualifying facility and an electric utility, no qualifying facility shall be compelled to provide energy or capacity to the electric utility during an emergency beyond the extent provided by agreement between the qualifying facility and the utility.

Many comments from cogenerators and small power producers expressed concern that, during a system emergency, they might be required to make available all of their generation to the utility. Such a requirement might interrupt industrial processes with resulting damage to equipment and manufactured goods. Many industries install their own generating equipment in order to insure that even during a system emergency, their supply of power is not interrupted. To put in jeopardy the availability of power because of the facility's ability to provide power to the system during non-emergency periods would result in the discouragement of interconnected operation and a resultant discouragement of cogeneration and small power production. The Commission therefore proposes that the qualifying utility's obligation to provide power be established through contract.

In order to receive full credit for capacity, a qualifying facility must offer power during system emergencies to the same extent that it has agreed to provide power at the purchasing utility's discretion. For example, a 30 megawatt cogenerator may require 20 megawatts for its own industrial purposes, and thus may contract to provide 10 megawatts of capacity to the purchasing utility. During an emergency, the cognenerator must provide the 10 megawatts contracted for to the utility; it need not disrupt its industrial processes by supplying its full capability of 30 megawatts. Of course, if it should so desire, a cogenerator could

contractually agree to supply the full 30 megawatts during system emergencies. The availability of such additional back-up capacity should increase utility system reliability, and should be accounted for in the utility's rates for purchases from the cogenerator.

Paragraph (b) provides that an electric utility may discontinue purchases from a qualifying facility during a system emergency if such a purchase would contribute to the emergency. In addition, during system emergencies, a qualifying facility must be treated on a non-discriminatory basis—i.e., on the same basis that other customers of a similar class with similar load characteristics are treated with regard to interruption in service.

§ 292.110 *Standards for Operating Reliability*

Section 210(a) of PURPA states that the rules requiring electric utilities to buy from and sell to qualifying facilities shall include provisions respecting minimum reliability of qualifying facilities (including reliability of such facilities during emergencies) and rules respecting reliability of electric energy service to be available to such facilities from electric utilities during emergencies. Staff's analysis presented in the discussion paper regarding reliability of a particular qualifying facility concluded that every incidence of qualifying facility reliability can be accounted for through price; namely, the less reliable a qualifying facility might be, the less it should be entitled to receive for purchases of its power by the utility. The majority of comments received regarding this issue endorsed the Staff's recommendation. Accordingly, the Commission proposes that there be no specific standard relating to the reliability in the sense of ability to provide power for qualifying facilities.

Many commentors have proposed that the Commission's rules ensure that interconnection with qualifying facilities does not disrupt system reliability. One commentor proposed that qualifying facilities must automatically disconnect from utility lines upon interruption or interference with utility service, or upon the flow of excessive current between the utility system and the non-utility generator.[20]

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[20] Comments of Illinois Power Company, filed August 14, 1979.

It is the Commission's understanding that safety equipment exists which can ensure that qualifying facilities do not energize utility lines during utility outages. This section accordingly provides that any qualifying facility may be subject to reasonable standards to ensure system safety and reliability in interconnected operations. Each State regulatory authority and nonregulated electric utility is permitted to establish standards for interconnected operations between electric utilities and qualifying facilities. These standards may be recommended by a utility or any other person. The standards must be accompanied by a statement showing the need for the standard on the basis of system safety and operating requirements.

SUBPART C

Summary of this Subpart

Rules proposed in this subpart are intended to carry out the responsibility of the Commission to encourage cogeneration and small power production by clarifying to all parties concerned the nature of the obligation to implement the Commission's rules under section 210.

In the Commission's view, section 210(f) affords the State regulatory authorities and nonregulated electric utilities great latitude in determining the manner of implementation of the Commission's rules so long as the manner chosen is reasonably designed to implement the requirements of Subpart A. The Commission recognizes that many States and individual nonregulated electric utilities have ongoing programs to encourage small power production and cogeneration. The Commission also recognizes that economic and regulatory circumstances vary from State to State and utility to utility. It is within this broad latitude, and with the recognition of the work already begun and of the variety of local conditions that the Commission proposes to promulgate its regulations requiring implementation of rules issued under section 210.

Because of the Commission's desire not to create unnecessary burdens at the State level, these proposed rules provide a procedure whereby a State regulatory authority or nonregulated electric utility may apply for a waiver if it can

demonstrate that compliance with certain requirements of Subpart A is not necessary to encourage cogeneration or small power production and is not otherwise required under section 210.

Implementation

Section 210(f) of PURPA requires that within one year after the date that this Commission prescribes its rules under subsection (a), and within one year of the date any of these rules is revised, each State regulatory authority and each nonregulated electric utility, after notice and opportunity for hearing, must implement the rules or revisions thereof, as the case may be.

The obligation to implement section 210 rules is a continuing obligation which begins within one year after promulgation of such rules. The requirements to implement may be fulfilled either through (1) the enactment of laws or regulations at the State level, (2) by application on a case-by-case basis by the State regulatory authority, or nonregulated utility, of the rules adopted by the Commission, or (3) by any other action reasonably designed to implement the Commission's rules. In the first case, implementation would consist of the issuance of rules after notice, and an opportunity for a hearing. In the second case, the State regulatory authority or nonregulated utility would be required to hold hearings regarding its proposed procedure for operating on a case-by-case basis, within the one-year statutory period.

Review and Enforcement

Section 210(g) of PURPA provides one of the means of obtaining judicial review of a proceeding conducted by a State regulatory authority or nonregulated utility for purposes of implementing the Commission's rules under section 210. Under subsection (g), review may be obtained pursuant to procedures set forth in section 123 of PURPA. This section contains provisions with regard to judicial review and enforcement of determinations made by State regulatory authorities and nonregulated utilities under Subtitle A, B. or C of Title I in the appropriate State court. These provisions also apply to review of any action taken to

implement the rules under section 210. This means that persons can bring actions in State court to require the State regulatory authorities or nonregulated utilities to implement these regulations. Section 123(c)(2) of PURPA restates the requirements of section 123(c)(1) as they apply to Federal agencies. This distinction between Federal agencies and non-Federal agencies also applies to review and enforcement of the implementation of the rules under section 210.

Finally, the Commission believes that review and enforcement of implementation under section 210 of PURPA, can consist not only of review and enforcement as to whether the State regulatory authority or nonregulated electric utility has conducted the initial implementation properly—namely put into effect regulations implementing section 210 rules or procedures for that implementation, after notice and an opportunity for a hearing. It can also consist of review and enforcement with regard to the application by a State regulatory authority or nonregulated electric utility, on a case-by-case basis, of its regulations or any other provision it may have adopted to implement the Commission's rules under section 210.

Section 210(h)(2)(A) of PURPA states that the Commission may enforce regulations under section 210(f). The Congress has provided not only for private causes of action in State courts to obtain judicial review and enforcement of the implementation of the Commission's rules under section 210, but has also given to the Commission that authority.

SECTION-BY-SECTION ANALYSIS

§ 292.301—*Implementation by State Regulatory Authorities and Nonregulated Utilities*

Paragraph (a) of § 292.301 sets forth the obligation of each State regulatory authority to commence implementation of Subpart A within one year of the date these rules take effect. In complying with this paragraph the State regulatory authorities are required to provide for notice and opportunity for public hearing. As described in the summary of this part, such implementation may consist of the adoption of the Commission's rules, an undertaking to

resolve disputes between qualifying facilities and electric utilities arising under Subpart A, or any other action reasonably designed to implement Subpart A.

This section does not cover one provision of Subpart A which is not required to be implemented by the State regulatory authority or nonregulated electric utility. This provision is § 292.103, the implementation of which is subject to § 292.302, which will be discussed below.

Subsection (b) sets forth the obligation of each nonregulated electric utility to commence, after notice and opportunity for public hearing, implementation of Subpart A. The nonregulated electric utilities, being both the regulator and the utility subject to the regulation, may satisfy the obligation to commence implementation of Subpart A through issuance of regulations, an undertaking to comply with Subpart A, or any other action reasonably designed to implement that subpart. Paragraph (c) sets forth a reporting requirement under which each State regulatory authority and nonregulated electric utility is to file with the Commission not later than one year after these rules take effect, a report describing the manner in which it is proceeding to implement Subpart A.

§ 292.302—*Implementation of Reporting Objectives*

The obligation to comply with § 292.103 is imposed directly on electric utilities. This is different from the rest of Subpart A where the obligation to act is imposed on the State regulatory authority or nonregulated electric utility in its role as regulator. The Commission is exercising its authority under section 133 of PURPA to require this reporting.

Any electric utility which fails to comply with the requirements of § 292.103(b) is subject to the same penalties as it might receive as a result of a failure to comply with the requirements of the Commission's regulations issued under section 133 of PURPA. As stated earlier in this preamble, the data required by § 292.103 will form the basis for the rates for purchases; § 292.103 is thus a critical element in the program this Commission is providing. The Commission believes that, with regard to utilities subject

to section 133 of PURPA, the Commission may exercise its authority under section 133 to require the data required by § 292.102(b) on the basis that the Commission finds such information necessary to allow determination of the costs associated with providing electric services. With regard to utilities not subject to section 133, if they fail to provide the data called for in § 292.103(c), the Commission may compel its production under the Federal Power Act and other statutes which give the Commission authority to require reporting of this data.

§ 202.303—*Waivers*

Paragraph (a) provides for a procedure by which any State regulatory authority or nonregulated electric utility may apply for a waiver from the application of any of the requirements of Subpart A other than § 292.103. This provision is included in recognition of the need for the Commission to afford flexibility to the States and non-regulated utilities to implement the Commission's rules under section 210.

Paragraph (b) provides that any electric utility subject to the requirements of § 292.103(c) may apply to the Commission for a waiver from the application of such requirements. This provision is included to afford to the Commission flexibility to enforce the obligations of § 292.103(c) so that it may consider the burden which may be placed on the utility by application of this section.

SUBPART D—*Exemption of Qualifying Small Power Production and Cogeneration Facilities From Certain Federal and State Laws and Regulations*

§ 292.401—*Exemptions For Qualifying Facilities from the Federal Power Act.*

Section 210(e) of PURPA states that the Commission shall prescribe rules under which qualifying facilities are exempt in part from the Federal Power Act, from the Public Utility Holding Company Act of 1935, from State laws and regulations respecting the rates, or respecting the financial or organizational regulation, of electric utilities, or from any combination of the foregoing, if the Commission

determines such exemption is necessary to encourage cogeneration and small power production. As noted in the Staff discussion paper, the Congres sintended the Commission to make liberal use of its exemption authority in order to remove the disincentive of utility-type regulation. The Commission believes that broad exemption is appropriate.

Section 210(e)(2) of PURPA provides that the Commission is not authorized to exempt small power production facilities of 30 to 80 megawatt capacity from any of these laws. An exception is made for small power production facilities using biomass. Such facilities between 30 and 80 megawatts may be exempted from the Public Utility Holding Company Act of 1935 and from State regulations but may not be exempted from the Federal Power Act.

Paragraph (a) sets forth those facilities eligible for exemption. Paragraph (b) provides that facilities described in paragraph (a) shall be exempted from all but certain specified sections of the Federal Power Act.

Section 210(e)(3)(C) of PURPA provides that no qualifying facility may be exempted from any license or permit requirement under Part I of the Federal Power Act. Accordingly, the Commission proposes not to exempt qualifying facilities from Part I of the Federal Power Act. The Commission recently issued simplified procedures for obtaining water power licenses for hydroelectric projects of 1.5 megawatts or less, and has issued proposed regulations to expedite licensing of existing facilities.[21]

As noted in the discussion paper, cogenerators and small power production facilities could be the subject of an order under section 202(c) of the Federal Power Act requiring them to provide energy if the Economic Regulatory Administration determines that an emergency situation exists. Because application of this section is limited to emergency situations and is not affected by the fact that a facility attains qualifying status or engages in interchanges with an

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[21] *See* Order No. 11, Simplified Procedures for Certain Water Power Licenses, Docket No. RM79-9, issued September 5, 1978, and Application for License for Major Project—Existing Dam, Docket No. RM79-36, 44 F.R. 24095 (April 21, 1979).

electric utility, the Commission proposes that qualifying facilities not be exempted from section 202(c) of the Act.

Sections 203, 204, 205, 206, 208, 301, 302 and 304 of the Act reflect traditional rate regulation or regulation of securities of public utilities. The Commission proposes that qualifying facilities be exempted from these sections of the Federal Power Act.

Section 305(c) of the Act imposes certain reporting requirements on interlocking directorates. The Commission proposes that any person who otherwise is required to file a report regarding interlocking positions not be exempted from such requirement because he or she is also a director or officer of a qualifying facility.

Finally, the enforcement provisions of Part III will continue to apply with respect to the sections of the Federal Power Act from which qualifying facilities are not exempt.

§ 292.402—*Exemptions for Qualifying Facilities from the Public Utility Holding Company Act and Certain State Laws and Regulations.*

Under section 210(e) of PURPA the Commission can exempt qualifying facilities from regulation under the Public Utility Holding Company Act of 1935 and State laws and regulations concerning rates or financial organizations. Only cogeneration facilities and small power production facilities of 30 megawatts or less may be exempted from both of these laws, with the exception that any qualifying small power production facility (i.e., up to 80 megawatts) using biomass as a primary energy source can be exempted from these laws.

The Staff discussion paper recommended that, where a qualifying facility is subjected to more stringent regulation than other companies solely by reason of the fact that it is engaged in the production of electric energy, these more stringent requirements should be eased through exemption of qualifying facilities. By excluding any qualifying facility from the definition of an "electric utility company" under section 79 (b)(3) of the Public Utility Holding Company Act of 1935, such facilities would be removed from Public Utility Holding Company Act regulation which is applied exclu-

sively to electric utility companies. Moreover, by excluding qualifying facilities from this definition, parent companies of qualifying facilities would not be subject to additional regulation as a result of electric activities of their subsidiaries. The Commission therefore believes that in order to encourage cogeneration and small power production it is necessary to exempt cogenerators and small power producers from the provisions of the Public Utility Holding Company Act of 1935.

Accordingly, paragraph (b) states that no qualifying facility shall be considered to be an "electric utility company", as defined in section 79 (b)(3) of the Public Utility Holding Company Act of 1935.

Section 210(e) of PURPA states that qualifying facilities which may be exempted from the Public Utility Holding Company Act may also be exempted from State laws and regulations respecting the rates or respecting the financial or organization regulation of electric utilities. The Staff discussion paper sets forth two approaches to be taken to exemption from State law. One would be to analyze the laws of each State and apply the exemptions citing specific sections of State law and regulations. The second approach discussed would be to make a broad proscription from State State laws and regulations which would conflict with the State's implementation of the Commission's rules under section 210.

All of the comments received recommended the broader approach. The Commission believes that such broad exemption is necessary to encourage cogeneration or small power production. Accordingly, subparagraph (c)(1) provides that any qualifying facility shall be exempt from State laws and regulations respecting rates for sales of electric energy to electric utilities, and from financial and organizational regulation of electric utilities.

Subparagraph (c)(2) provides that, upon request of a State regulatory authority a nonregulated electric utility, the Commission may limit the applicability of the broad exemption from the State laws. This provision is intended to add flexibility to the exemption.

The Commission perceives that there may be instances in which a qualifying facility would wish to have an interpretation of whether or not it is subject to a particular State law in order to remove any uncertainty. Under subparagraph (c)(2), the Commission may determine whether a qualifying facility is exempt from a particular State law or regulation.

WRITTEN COMMENTS AND PUBLIC HEARINGS

Interested persons are invited to submit written comments on the proposed regulation to the Office of the Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, N.E., Washington, D.C. 20426. Comments should reference Docket No. RM79-55 on the outside of the envelope and on all documents submitted to the Commission. In order that the Commission be able to take into account as many comments as possible, the Commission requests that persons submitting comments assist in three ways. First, persons should identify specifically the section or subpart they are addressing. Second, comments should clearly state whether they involve technical, policy or legal matters. Finally, where comments urge a different approach from one presented, specific alternative language should be proposed to the extent practicable.

In addition, the preliminary Environmental Assessment prepared by Commission Staff regarding the Commission's proposed rules implementing sections 201 and 210 of PURPA is available in the Commission's Office of Public Information. As stated in the Request for Further Comment on Proposed Rulemaking Establishing Requirements and Procedures for a Determination of Qualifying Status for Small Power Production and Cogeneration issued today, the Commission is seeking comments on specific issues relating to the preliminary Environmental Assessment.

The Commission has also received many comments in response to the Staff discussion paper and the notice of proposed rulemaking in Docket No. RM79-54. All comments filed in response to those documents are being made part of the record and will be considered in the determination of the final rule in this proceeding.

Fifteen (15) copies should be submitted. All comments and related information received by the Commission by December 1, 1979, will be considered prior to the promulgation of final regulations.

In addition, the Commission will conduct public hearings in several cities at which interested persons will have the opportunity to present their views. Places, dates and times will be announced shortly.

(Public Utility Regulatory Policies Act of 1978, Pub. L. 95-617, Energy Supply and Environmental Coordination Act, 15 U.S.C. § 791 *et seq.*, Federal Power Act, as amended, 16 U.S.C. § 792 *et seq.*, Department of Energy Organization Act, Pub. L. 95-91, E.O. 12009, 42 *Fed. Reg.* 46267)

In consideration of the foregoing, it is proposed to amend Chapter I of Title 18, Code of Federal Regulations, as set forth below.

By direction of the Commission.

(SEAL)

KENNETH F. PLUMB,
SECRETARY

(1) Subchapter K is amended in the table of contents by deleting the title for Part 292 and substituting the following in lieu thereof:

Part 292—Regulation of Small Power Production and Cogeneration Facilities Under Sections 201 and 210 of the Public Utility Regulatory Policies Act of 1978.

(2) Subchapter K is further amended in the table of contents to Part 292 and in the text of the regulations by changing the title to Part 292 and by adding new subparts A, C, and D to read as follows:

Part 292—Regulation of Small Power Production and Cogeneration Facilities Under Sections 201 and 210 of the Public Utility Regulatory Policies Act of 1978.,

SUBPART A—RATES FOR SALES BETWEEN ELECTRIC UTILITIES AND QUALIFYING COGENERATION AND SMALL POWER PRODUCTION FACILITIES

Sec.
292.101 Scope.
292.102 Definitions.
292.103 Availability of Electric Utility System Cost Data.
292.104 Electric Utility Obligations Under This Subpart.
292.105 Rates for Purchases.
292.106 Rates for Sales.
292.107 Simultaneous Purchase and Sale.
292.108 Costs of Interconnection.
292.109 System Emergencies.
292.110 Standards for Operating Reliability.

SUBPART C—IMPLEMENTATION

Sec.
292.301 Implementation by State Regulatory Authorities and Nonregulated Electric Utilities.
292.302 Implementation of Reporting Objectives.
292.303 Waiver.

SUBPART D—EXEMPTION OF QUALIFYING SMALL POWER PRODUCTION FACILITIES AND COGENERATION FACILITIES FROM CERTAIN FEDERAL AND STATE LAWS AND REGULATIONS

Sec.

292.401 Exemptions for Qualifying Facilities from the Federal Power Act.

292.402 Exemptions for Qualifying Facilities from the Public Utility Holding Company Act and Certain State Laws and Regulations.

(Authority: This part issued under the Public Utility Regulatory Policies Act of 1978, Pub. L. 95-617, Energy Supply and Environmental Coordination Act, 15 U.S.C. § 791 *et seq.*, Federal Power Act, as amended, 16 U.S.C. § 792 *et seq.*, Department of Energy Organization Act, Pub. L. 95-91, E.O. 12009, 42 F.R. 46267.)

SUBPART A—ARRANGEMENTS BETWEEN ELECTRIC UTILITIES AND QUALIFYING COGENERATION AND SMALL POWER PRODUCTION FACILITIES UNDER SECTION 210 OF THE PUBLIC UTILITY REGULATORY POLICIES ACT OF 1978

§ 292.101 *Scope.*

(a) *Applicability.* This subpart applies to the regulation of sales and purchases of electric energy and capacity between qualifying cogeneration and small power production facilities and electric utilities.

(b) *Negotiated rates or terms.* Nothing in this subpart—

(1) limits the authority of any electric utility or any qualifying facility to agree to a rate for purchases or sales, or terms or conditions relating to such sales, which differ from the rate or terms which would otherwise be required by this subpart, or

(2) affects the validity of any contract entered into between a qualifying facility and an electric utility.

§ 292.102 *Definitions.*

(a) *General rule.* Terms defined in the Public Utility Regulatory Policies Act of 1978 (PURPA) shall have the

same meaning for purposes of this part as they have under PURPA, unless further defined in this part.

(b) *Definitions:* For purposes of this part:

(1) "qualifying facility" means a cogeneratioin facility or a small power production facility which is a qualifying facility under § 292.208 of the Commission's regulations;

(2) "purchase" means the purchase of electric energy or capacity from a qualifying facility by an electric utility;

(3) "sale" means the sale of electric energy or capacity by an electric utility to a qualifying facility;

(4) "system emergency" means a condition on a utility's system which is likely to result in disruption of service to a significant number of customers or is likely to endanger life or property;

(5) "rate" means any price, rate, charge, or classification made, demanded, observed or received with respect to the sale or purchase of electric energy or capacity, or any rule, regulation, or practice respecting any such rate, charge, or classification, and any contract pertaining to the sale or purchase of electric energy or capacity.

(6) "avoided costs" means the costs to the electric utility of electric energy or capacity or both which, but for the purchase from such cogenerator or small power producer, such utility would generate itself or purchase from another source.

§ 292.103 *Availability of Electric Utility System Cost Data.*

(a) Applicability. (1) Except as provided in subparagraph (2), paragraph (b) applies to each electric utility, in any calendar year, if the total sales of electric energy by such utility for purposes other than resale exceeded 500 million kilowatt-hours during any calendar year beginning after December 31, 1975, and before the immediately preceding calendar year.

(2) Each utility having total sales of electric energy for purposes other than resale of less than one billion kilowatt-hours during any calendar year beginning after December 31, 1975, and before the immediately preceding year, shall not be subject to the provisions of this section until June 30, 1982.

(b) *General Rule.* Not later than June 30, 1980, and every two years thereafter, each regulated electric utility to which this section applies shall provide to its State regulatory authority, and shall maintain for public inspection, and each nonregulated electric utility to which this section applies shall maintain for public inspection, the following data:

(1) the estimated avoided cost of energy on the electric utility's system for various levels of purchases from qualifying facilities. Such levels of purchases shall be stated in blocks of one hundred megawatts or less for systems with peak demand of 1000 megawatts or more, and in blocks equivalent to not more than ten percent of the system peak demand, for systems of less than 1000 megawatts. The avoided costs shall be stated on a cents per kilowatt-hour basis, during daily and seasonal peak and off-peak periods, by year, for the immediately preceding year, and on an estimated cents per kilowatt-hour basis for the current calendar year and each of the next 5 years;

(2) the electric utility's plan and schedule for the addition of capacity, for purchases of firm energy and capacity, and for capacity retirements for each of the next 10 years; and

(3) the estimated costs at completion, on the basis of dollars per kilowatt, of the planned capacity additions and planned firm purchases. These costs should be expressed in terms of individual generating units and by planned firm purchases.

(c) *Special Rule.* Each electric utility (other than any electric utility to which paragraph (b) applies) shall, upon request of a qualifying facility, provide sufficient data to enable such qualifying facility to determine the electric utility's avoided costs for any period described in paragraph (b). If any such electric utility fails to provide such information on request, the qualifying facility may apply to the Commission for an order requiring that the information be provided.

§ 292.104 *Electric Utility Obligations Under This Subpart.*

(a) *Obligation to Purchase from Qualifying Facilities.* Except during periods identified in § 292.105(e), each elec-

tric utility shall purchase in accordance with § 292.105 any capacity or energy which is made available either directly from the qualifying facility or which is transmitted to such utility from the qualifying facility through the facilities of another electric utility.

(b) *Obligation to Sell to Qualifying Facilities.* Each electric utility shall sell to any qualifying facility energy and capacity requested by such qualifying facility in accordance with § 292.106

(c) *Obligation to Interconnect.* Any electric utility shall make all interconnections with any qualifying facility as may be necessary to accomplish purchases or sales under this subpart. The obligations for the costs of any such interconnection shall be determined in accordance with § 292.108.

(d) *Transmission of Purchases to Other Electric Utilities.* If a qualifying facility agrees, an electric utility which would otherwise be obligated to purchase capacity or energy or energy from such qualifying facility may transmit the energy to any other electric utility. Any electric utility to which such energy is transmitted shall purchase such energy under this subpart as if such qualifying facility were supplying energy and capacity directly to such electric utility. The cost of transmission shall be assigned to the qualifying facility pursuant to § 292.108 of these rules. The rate for purchase by the electric utility to which such energy is transmitted shall be adjusted to reflect line losses pursuant to § 292.105(d)(3).

(e) *Parallel Operation.* Each electric utility shall offer to operate in parallel with a qualifying facility, provided that the qualifying facility complies with any relevant standards established pursuant to § 292.110.

§ 292.105 *Rates for Purchases.*

(a) *Rates for Purchases.* Rates for purchases of energy and capacity from any qualifying facility:

(1) shall be just and reasonable to the electric consumer of the electric utility and in the public interest;

(2) shall not discriminate against qualifying cogeneration and small power production facilities; and

(3) shall not exceed the avoided costs of such a purchase. There is a rebuttable presumption that the rate for purchase meets the requirements of this paragraph if the rate reflects the avoided costs resulting from such purchase as determined on the basis of the cost of energy and capacity set forth pursuant to § 292.103(b) or (c).

(b) *Tariffs for Purchases From Facilities of Ten Kilowatts or Less.* Each electric utility, upon request of a qualifying facility, shall establish a tariff or other method for setting forth standard rates for purchases from qualifying facilities with a design capacity of 10 kilowatts or less.

(c) *Purchases "As Available" or Pursuant to a Legally Enforceable Obligation.* A qualifying facility shall have the option either to provide energy or capacity to an electric utility—

(1) as the qualifying facility determines such energy or capacity to be available for such purchases, in which case the rates for such purchases may be based on the purchasing utility's avoided energy costs, or

(2) pursuant to a legally enforceable obligation for the delivery of energy or capacity at a future date, in which case the rates for purchases may be based on estimates of future avoided costs of energy or capacity.

(d) *Factors Affecting Rates For Purchases.* In implementing the provisions of this subpart, a State regulatory authority (with respect to any electric utility over which it has ratemaking authority) or nonregulated electric utility shall consider with regard to rates for purchases the following factors:

(1) the availability of capacity from a qualifying facility during system daily and seasonal peak periods, including—

(i) the ability of the utility to dispatch the qualifying facility;

(ii) the qualifying facility's ability and willingness to provide energy or capacity during system emergencies;

(iii) the length, frequency, and scheduling flexibility of scheduled maintenance by the qualifying facility;

(iv) the expected or demonstrated reliability of the qualifying facility; and

(v) the length of any contract term between the electric utility and the qualifying facility and its termination notice requirements or the length of any legally enforceable obligation to provide energy or capacity undertaken by the qualifying facility;

(2) the relationship of energy or capacity from a qualifying facility to an electric utility's capacity and energy needs as expressed in § 292.103, including:

(i) the ability of the electric utility to reduce or avoid costs, including the deferral of capacity additions, as a result of the availability individually or in the aggregate from qualifying facilities; and

(ii) the smaller capacity increments and the shorter lead times available with additions of capacity from qualifying facilities; and

(3) the costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualifying facility, if the purchasing electric utility generated or purchased an equivalent amount of electric energy.

(e) *Periods During Which Purchases Not Required.* An electric utility will not be required to purchase electric energy and capacity during any period identified by the State regulatory authority having jurisdiction over the rates of such utility, or the nonregulated electric utility, during which purchases from qualifying facilities might result in costs greater than those which the utility would incur if it did not make such purchases, but instead generated or purchased an equivalent amount of electric energy.

§ 292.106 *Rates for Sales.*

(a) *General Rules.* (1) Rates for sales shall not discriminate against any qualifying facility in comparison to rates for sales to other customers served by the electric utility. Rates for sales shall be just and reasonable and in the public interest.

(b) Each electric utility shall provide electric energy and capacity and other services to any qualifying facility, at a rate at least as favorable as would be provided to a customer who does not have his own generation. The costs of in-

terconnection shall be assigned pursuant to § 292.108 of this part.

(c) *Additional Services to be Provided by Qualifying Facilities.* Each electric utility shall provide to any qualifying facility the following types of service, even if such types of service are not provided to other retail customers:

(1) supplementary power;

(2) back-up power;

(3) interruptible power; and

(4) maintenance power.

(d) *Rates for Sales of Back-Up and Maintenance Power.* The rate for sales of back-up power or maintenance power—

(1) shall not be based upon an assumption (unless supported by factual data) that forced outages or other reductions in electric output by all qualifying facilities on an electric utility's system will occur simultaneously;

(2) shall not be based upon an assumption (unless supported by factual data) that forced outages or other reductions in electric output by all qualifying facilities will occur during the system peak; and

(3) shall take into account the extent to which a qualifying facility has coordinated periods of scheduled maintenance with such electric utility.

§ 292.107 *Simultaneous Purchase and Sale.*

A qualifying facility shall be permitted to receive rates established pursuant to § 292.105(a) for the electric energy and capacity generated by the facility, while simultaneously buying energy and capacity from such utility for use in the facility at rates established in accordance with § 292.106(a), to the extent that such purchases are produced by capacity the construction of which was commenced after the date of issuance of this part.

§ 292.108 *Costs of Interconnection.*

(a) *Definition.* For purposes of this subpart, "interconnection costs" means the costs of connection, switching, metering, transmission, safety provisions and other costs incurred by the utility reasonably resulting from intercon-

nected operation between an electric utility and a qualifying facility.

(b) *Reimbursement for Interconnection Costs for Purchases.* Each qualifying facility must reimburse any electric utility which purchases capacity or energy from such qualifying facility for any interconnection costs. These costs are limited to those costs which the purchasing utility would incur if it did not make such purchases but instead generated an equivalent amount of electric energy itself or purchased an equivalent amount of electric energy from other sources.

(c) *Reimbursement for Interconnection Costs for Sales.* Each qualifying facility must reimburse any electric utility which sells capacity or energy to such qualifying facility for any interconnection costs. The apportionment of interconnection costs between such qualifying facility and electric utility under this paragraph shall not discriminate against any qualifying facility in comparison to any other customers served by the electric utility.

§ 292.109 *System Emergencies.*

(a) *Qualifying facility obligation to provide power during system emergencies.* A qualifying facility shall be required to provide energy or capacity to an electric utility during a system emergency only to the extent provided by agreement between such qualifying facility and electric utility or to the extent ordered under section 202(c) of the Federal Power Act.

(b) *Discontinuance of Purchases and Sales During System Emergencies.* During any system emergency, an electric utility may discontinue—

(1) purchases from a qualifying facility if such purchases would contribute to such emergency; and

(2) sales to a qualifying facility, provided that such discontinuance is on a nondiscriminatory basis.

§ 292.110 *Standards for Operating Reliability.*

Any qualifying facility may be subject to reasonable standards to ensure system safety and reliability in interconnected operations. Such standards may be recommended by any electric utility, or by any other person.

Each State regulatory authority (with respect to any electric utility over which it has ratemaking authority) or any nonregulated electric utility may establish such standards as it determines necessary to carry out the purposes of this section. Such standards must be accompanied by a statement setting forth the need for such standards on the basis of system safety and reliability requirements.

* * * * *

SUBPART C—IMPLEMENTATION

§ 292.301 *Implementation by State Regulatory Authorities and NonRegulated Electric Utilities.*

(a) *State Regulatory Authorities.* Not later than one year after these rules take effect, each State regulatory authority shall, after notice and an opportunity for public hearing, commence implementation of Subpart A (other than § 292.103 thereof). Such implementation may consist of the issuance of regulations; an undertaking to resolve disputes between qualifying facilities and electric utilities arising under Subpart A, or any other action reasonably designed to implement such subpart (other than § 292.103 thereof).

(b) *Nonregulated Electric Utilities.* Not later than one year after these rules take effect, each non-regulated electric utility shall, after notice and an opportunity for public hearing, commence implementation of Subpart A (other than §292.103 thereof). Such implementation may consist of the issuance of regulations, an undertaking to comply with Subpart A, or any other action reasonably designed to implement such subpart (other than § 292.103 thereof).

(c) *Reporting Requirement.* Not later than one year after these rules take effect, each State regulatory authority and nonregulated electric utility shall file with the Commission a report describing the manner in which it will implement Subpart A (other than § 292.103 thereof.

§ 292.302 *Implementation of Reporting Objectives.*

Any electric utility which fails to comply with the requirements of § 292.103(b) shall be subject to the same penalties to which it may be subjected for failure to comply

with the requirements of the Commission's regulations issued under section 133 of PURPA.

§ 292.303 *Waivers*

(a) *State regulatory authority and non-regulated utility waivers.* Any State regulatory authority or nonregulated electric utility may apply for a waiver from the application of any of the requirements of Subpart A (other than § 292.103 thereof).

(b) *Electric utility waiver.* Any electric utility may apply for a waiver from the application of any of the requirements of § 292.103(c).

(c) *Commission action.* The Commission will grant such a waiver only if an applicant under paragraph (a) or (b) demonstrates that compliance with the requirements of Subpart A or § 292.103, as the case may be, is not necessary to encourage cogeneration and small power production and is not otherwise required under section 210 of PURPA.

SUBPART D—EXEMPTION OF QUALIFYING SMALL POWER PRODUCTION FACILITIES AND COGENERATION FACILITIES FROM CERTAIN FEDERAL AND STATE LAWS AND REGULATIONS

§ 292.401 *Exemptions for Qualifying Facilities from the Federal Power Act.*

(a) *Applicability.* This section applies to:

(1) qualifying cogeneration facilities, and

(2) qualifying small power production facilities which have a power production capacity which does not exceed 30 megawatts.

(b) *General Rule.* Any qualifying facility described in paragraph (a) shall be exempt from all sections of the Federal Power Act, except—

(1) Sections 1–30;

(2) Section 202(c);

(3) Section 305(c); and

(4) any necessary enforcement provision of Part III with regard to the sections listed in (1), (2) and (3).

§ 292.402 *Exemptions for Qualifying Facilities from the Public Utility Holding Company Act and Certain State Laws and Regulations.*

(a) *Applicability.* This section applies to any qualifying facility described in § 292.401(a), and to any qualifying small power production facility with a power production capacity over 30 megawatts if such facility produces electric energy solely by the use of biomass as a primary energy source.

(b) *Exemption from the Public Utility Holding Company Act of 1935.* Any qualifying facility described in paragraph (a) shall not be considered to be an "electric utility company" as defined in section 79(b)(3) of the Public Utility Holding Company Act of 1935.

(c) *Exemption from Certain State Laws and Regulations.*

(1) Any qualifying facility shall be exempted from State laws and regulations respecting:

(i) the rates for sales of electric energy by qualifying cogeneration and small power production facilities to electric utilities; and

(ii) the financial and organizational regulation of electric utilities.

(2) Upon request of a State regulatory authority or nonregulated electric utility, the Commission may consider any limitation of the application of subparagraph (1).

(3) Upon request of any person, the Commission may determine whether a qualifying facility is exempt from a particular State law or regulation.

CULLEN AND DYKMAN
177 MONTAGUE STREET
BROOKLYN, NEW YORK 11201
(212) 855-9000

December 14, 1979

Hon. Kenneth F. Plumb
Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

Re: Small Power Production and Cogeneration Facilities
—Qualifying Status—Docket No.RM79-54
—Rates and Exemptions—Docket No. RM79-55

Dear Mr. Plumb:

Enclosed for filing with the Commission in the above proceedings are an original and fourteen copies of the Additional Comments of The Brooklyn Union Gas Company.

Kindly acknowledge receipt of the enclosures on the enclosed copy of this letter. A self-addressed envelope is also enclosed for your convenience.

Yours truly,

Michael W. Hall

MWH:ys
Enclosures

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

In the Matter of

SMALL POWER PRODUCTION
AND COGENERATION
FACILITIES—QUALIFYING STATUS

and

SMALL POWER PRODUCTION
AND COGENERATION
FACILITIES—RATES AND EXEMPTIONS

Docket No. RM 79-54

Docket No. RM 79-55

ADDITIONAL COMMENTS OF *THE BROOKLYN UNION GAS COMPANY*

By notices issued October 18[1] and 19[2], 1979, the Commission has requested comments on: (1) a proposed rule under which small power production facilities (SPPF) and cogeneration facilities (CF) will be able to obtain the status of "qualifying" facilities under Section 201 of the Public Utility Regulatory Policies Act of 1978 (PURPA) and (2) a proposed rule respecting the criteria which SPPFs and CFs must meet to be exempt from certain state and federal laws and regulations, the conditions under which SPPFs and CFs can be interconnected with electric utilities, the types of service to be offered by electric utilities to "qualifying facilities" and the rates for such services and for sales of electricity by "qualifying facilities" to electric utilities.

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[1] Notice of Proposed Rulemaking Regarding the Implementation of Section 210 of the Public Utility Regulatory Policies Act of 1978, Docket No. RM79-55, issued October 18, 1979.

[2] Request For Further Comments on Proposed Rulemaking Establishing Requirements and Procedures For A Determination of Qualifying Status for Small Power Production and Cogeneration Facilities, Docket No. RM79-54, issued October 19, 1979.

The Brooklyn Union Gas Company (Brooklyn Union) has filed comments[3] in these proceedings in response to the Commission's June 27, 1979 Notice of Proposed Rulemaking in Docket No. RM79-54 and a Staff paper issued in Docket No. RM79-55[4]. Brooklyn Union has reviewed those comments in light of the Commission's notices of October 18 and 19, 1979, and believes that nothing has occurred which would change the views expressed on the matters addressed therein. Accordingly, the following comments are in addition to, and intended to supplement, Brooklyn Union's August 1, 1979 comments herein.

I.

BROOKLYN UNION' OPERATIONS AND INTEREST

Brooklyn Union is engaged primarily in the provision of retail gas service to approximately 4,000,000 consumers in a service area located within the City of New York. Brooklyn Union and a subsidiary company have been engaged for many years in the sale and financing of gas-fired appliances and equipment. Brooklyn Union provides gas service to a number of cogeneration facilities, and is engaged in a research and development program to study the reliability, economics, and market for various types of cogeneration equipment. Brooklyn Union has assisted its customers in the design and installation of cogeneration equipment. In addition, Brooklyn Union has conducted studies of projects involving small power production facilities.

The terms and rates for electric utility standby service for cogenerators in New York City are prohibitive. For certain types of cogeneration facilities which require parallel electric utility service, such service is simply not available in New York City. For these reasons, none of Brook-

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[3] See Comments of The Brooklyn Union Gas Company dated August 1, 1979.

[4] Staff Paper Discussing Commission Responsibilities to Establish Rules Regarding Rates and Exemptions for Qualifying Cogeneration and Small Power Production Facilities Pursuant to Section 210 of the Public Utility Regulatory Policies Act of 1978, Docket No. RM79-55, issued June 26, 1979.

lyn Union's existing cogeneration customers are interconnected with an electric utility system. Consequently, and because of various regulatory impediments, the CFs served by Brooklyn Union make no sales of electricity to electric utilities and have installed redundant equipment in lieu of standby utility service.

For all of the foregoing reasons, Brooklyn Union and the Consumers it serves have a direct and substantial interest in the rules proposed and issues presented in these dockets.

II.

COMMENTS ON QUALIFICATION RULES

The Commission's October 19, 1979 Request for Further Comments summarized tentative conclusions reached in a Preliminary Environmental Assessment of the environmental impact of the proposed rules and requested comments on (1) proposed findings, including a finding that oil-fired diesel cogeneration facilities *may* significantly affect the environment under certain circumstances and (2) certain substantive or procedural modification of the proposed rules which might mitigate any potential adverse effects of the rules. See October 19, 1979 Request for Further Comments, *mimeo*, pp. 5, 9-11.

With respect to the conclusions reached in the Preliminary Environmental Assessment regarding diesel cogeneration, Brooklyn Union notes first that potentially significant environmental impacts *may* occur only in major high-density urban areas, in a commercial/residential setting and only where the proposed rules would encourage installation of multiple units within the same geographical area. Environmental Assessment, pp. 29, 30 (Figure 2) and 93. Since the rules which this Commission will issue will be *national* in scope, any across-the-board denial to oil-fired diesel facilities of the benefits accruing to a qualifying facility cannot properly be based upon tenuous conclusions which are valid, *if at all*, only in very limited areas of the country. Moreover, such a blanket proscription regarding diesel cogeneration would be likely to have a chilling effect on the further development of this cogeneration technolo-

gy. In light of the fact that at the overall efficiency standard required by proposed Section 292.206(e), a diesel cogenerator will be 1.8 to 2.4 times as fuel efficient as the average central electric generating station, Brooklyn Union submits that such a radical "cure" for the environmental impacts which *may* be potentially significant is not only inconsistent with Congress' intent to foster the more efficient use of fuel resources but is illogical.

There is additional evidence that outright prohibition of, or strict limitations on, the grant of qualifying facility status to diesel cogeneration facilities is not warranted, at least at the present time. Both the Preliminary Environmental Assessment (p. 29) and the Commission's Request for Further Comments (p. 5) acknowledges that factors such as the rising price of diesel fuel and uncertainty concerning the continuing availability of liquid fuels will limit the proliferation of oil-fired diesel cogeneration and, therefore, the potential environmental impact of this technology. Moreover, in highly developed urban areas where the potential environmental impacts of diesel cogeneration have been predicted to be potentially significant, existing environmental controls, including the National Ambient Air Quality Standards, will provide an additional limitation on the number of oil-fired diesel cogeneration facilities which can be installed. Preliminary Environmental Assessment, p. 29.

For the foregoing reasons, Brooklyn Union submits that no convincing case has been made for excluding diesel cogenerators from the benefits accorded to qualifying facilities. In this regard, in light of the Preliminary Environmental Assessment's basic conclusion that further study is necessary, Brooklyn Union respectfully suggests that oil-fired diesel cogeneration facilities meeting the efficiency criteria established by the Commission be accorded qualifying facility status at least until actual operating data can be gathered which will permit meaningful analysis of the nature and extent of the environmental effects of such facilities.

No matter how the Commission may elect to treat *new* oil-fired diesel cogeneration facilities in its final rule herein,

there is no logical basis for denying qualifying facility status to *existing* diesel cogenerators. Unless such facilities are large enough to be subject to the provisions of the Power Plant and Industrial Fuel Use Act, they will continue to use fuel oil whether or not they receive the benefits which Section 210 of PURPA confers upon qualifying cogeneration facilities. Consequently, any modification of the proposed rules which would have the effect of denying the benefits of this program to existing diesel cogenerators can only result in less efficient use of fuel resources, contrary to the intent of Congress.

Certain parties to these proceedings have urged the Commission to impose sweeping fuel use restrictions which would deny qualifying facility status to CFs using oil or natural gas. In support of such restrictions, these parties have argued (1) that the environmental impact of gas-fired CFs can be equated with that of oil-fired diesel CFs[5] and (2) that "policy considerations" require the Commission to discourage the use of natural gas in CFs. These arguements are without basis in fact or in logic.

The Preliminary Environmental Assessment concluded (p. 45):

> Benefits available under the Commission's rules to exist[ing] gas-fired cogeneration facilities can only result in increased use of natural gas and reduced use of oil.

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[5] Parties making this argument have submitted studies in these proceedings which purport to demonstrate that installation of additional oil-fired diesel cogeneration facilities will have a significant adverse impact on the environment in densely populated areas. The electric utility sponsors of these studies and other parties have attempted to use them to "tar" gas-fired cogeneration facilities with the "brush" of conclusions respecting the environmental effects of oil-fired diesel cogeneration. Brooklyn Union's review of these studies indicates that they are (1) based on contrary-to-fact assumptions regarding the price and availability of diesel fuel, capital costs, the timing of facilities' installation and taxes, (2) so limited with respect to the area of environmental impact considered that they are useless in analyzing the environmental impacts outside the specific areas of study and (3) clearly without application directly or by analogy to any other cogeneration technology, including gas-fired and dual fuel cogeneration.

> Consequently, the environmental effect of the Commission's rules on such facilities is positive.

Moreover, with respect to specific gas-fired cogeneration technologies considered in the Preliminary Environmental Assessment's, the potential environmental impacts compared favorably with the impact of oil-fired diesel CFs. For example, with respect to dual fuel engines which use both oil and natural gas, the Environmental Assessment observed (p. 44):

> Generally, natural gas is available during the spring, summer, and fall. Interruptions of gas supply, with the resulting diesel operation is likely to occur during the winter, if at all. This fact should mitigate the air quality impacts, since gas operation would be the norm during the summer months when air quality problems are most pronounced.

The Preliminary Environmental Assessment's analysis of the environmental effects of dual fuel and other gas-fired cogeneration technologies is consistent with the operating experience of the gas-fired CFs served by Brooklyn Union. Attached hereto as Appendix A is a recent study prepared by Fred C. Hart Associates entitled "Cogeneration In The Brooklyn Union Gas Company Service Area". That study concludes that the CFs in Brooklyn Union's service territory, which burn both gas and oil, do not impose inordinate burdens on the environment.

As noted above, none of Brooklyn Union's existing cogeneration customers are presently interconnected with an electric utility system. Due primarily to terms and rates for utility standby service which are prohibitive, and the unavailability of parallel electric service for those CFs requiring such service, these CFs have installed redundant equipment. Accordingly, only beneficial environmental effects can be anticipated to result from a Commission rule conferring qualifying facility status on these CFs.[6]

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[6] These beneficial environmental effects include a reduction in environmentally harmful emissions from utility central generating stations, reduced use of oil (approximately 68% of the electricity distributed by the utility providing electric service in Brooklyn Union's service territory is derived from oil-fired electric generation stations) and im-

The policy arguments of these parties are equally lacking in merit. These parties do not claim, nor could they, that Congress intended to deny gas-fired CFs the benefits of qualifying facility status under Title II of PURPA. Brooklyn Union submits that Congress' prescription of an over 100 million Btu per hour threshold for electric power plants and major fuel burning installations subject to the prohibitions against use of oil or gas in the Power Plant and Industrial Fuel Use Act, the absence of a specific prohibition against the use of gas by qualifying CFs under Title II of PURPA, and the provision of an exemption from incremental pricing for gasfired CFs in Section 206(c) (3) of the Natural Gas Policy Act of 1978 (NGPA) all manifest a conscious Congressional design to include gasfired cogeneration among the cogeneration technologies to be encouraged by this Commission. If anything, the fact that Congress extended to gas-fired CFs protection from higher energy costs in the NGPA—*a "benefit" not extended to any other cogeneration technology*—indicates Congress' recognition of the special role gas-fired CFs can and will play in maximizing fuel use efficiency.

Among those parties most vociferously opposing the use of natural gas for "inferior" cogeneration purposes are electric utilities which are actively engaged in dissipating this nation's "gas bubble" by using gas as boiler fuel in the generation of electricity. In light of the efficiency standards which the Commission has proposed for gas-fired CFs which seek qualifying facility status, Brooklyn Union submits that the twin goals of conserving natural resources and maximizing fuel use efficiency could be better achieved by use of natural gas in CFs which meet the Commission's efficiency standards and the termination, at the *earliest possible date*, of programs which encourage or permit consumption of vast quantities of natural gas in comparatively inefficient utility central electric generating stations.

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proved fuel use efficiency. In addition, the location of these CFs in relation to the electric utility's central generating stations indicates that additional energy savings will result from reduced transmission line losses.

Finally, Brooklyn Union submits that the reasoning employed and the result reached on the issue of fuel use restrictions in the Commission's June 27, 1979 Notice of Proposed Rulemaking in Docket No. RM79-54 is persuasive and should be dispositive of this issue:

> Under PURPA, the Commission may establish fuel use requirements for qualifying cogenerators of any size, but any such requirements regarding the use of natural gas or petroleum would only be effective at fuel heat input levels below the thresholds established by FUA for action by the Secretary of Energy. At such lower levels, a fuel burning installation that does not seek classification as a qualified cogenerating facility would not be subject to an FERC rule and could burn natural gas or oil for cogeneration, imposed by the Commission, could discourage cogeneration at the lower heat input levels, while not significantly reducing the use of oil or natural gas. *We conclude that restrictions or requirements on fuel use by qualifying cogeneration facilities are not appropriate in this proposed rule.*
>
> June 27, 1979, Notice
> of Proposed Rulemaking,
> p. 22-3 (emphasis added)

For all of the foregoing reasons, Brooklyn Union urges the Commission not to impose the burden of fuel use restrictions on the cogeneration technologies available to be employed in achieving the goal of optimum fuel use efficiency.

In its August 1, 1979 Comments in these proceedings, Brooklyn Union urged the Commission to modify the rule proposed in Docket No. RM79-54 (1) to provide a self-executing mechanism for qualification of cogeneration facilities having an aggregate electric generation capacity of 250 kilowatts or less; and (2) to substitute a single overall *annual* energy efficiency standard for the energy efficiency standards prescribed in proposed Sections 292.206(d), (e) and (f). Brooklyn Union continues to believe that such modifications are necessary to encourage wide-spread participation by cogenerators and would maximize the benefits of

the program. Accordingly, we urge the Commission to incorporate such modifications into its final rule herein.

III

COMMENTS ON DOCKET NO. RM79-55

Brooklyn Union strongly supports the Commission's conclusion (October 18, 1979 Notice of Proposed Rulemaking, p. 19-22) that the authority to require interconnection of electric utility systems with qualifying cogeneration facilities is inherent in Section 210 of PURPA. Requiring cogenerators to make cumulative and unnecessary filings and issuing redundant determinations regarding qualifying status and interconnections would plainly counter to, and the Congressional purpose of removing regulatory impediments to the most efficient use of fuel resources by cogenerators and electric utility systems. Accordingly, we urge the Commission to provide that once a CF has achieved qualifying facility status under the rules proposed in Docket No. RM79-54, there is no need for a separate application under Sections 202 and 204 of PURPA to interconnect such qualifying facility with an electric utility system.

Brooklyn Union strongly supports the requirement in proposed Section 292.104(e) of the rule that electric utilities offer to operate in parallel with a qualifying facility. The requirement for parallel operations is crucial. Although many types of cogeneration facilities must operate in parallel with an electric utility, we understand that such parallel operation is presently prohibited in New York City and may be prohibited elsewhere. Accordingly, the requirement that electric utilities offer to operate in parallel with qualifying CFs will serve to broaden the choice of cogeneration technologies which will be available to achieve the goal of maximum fuel use efficiency.

In Section 292.106(c), the Commission has proposed to require electric utilities to provide certain types of service to qualifying CFs even if such services are not provided to other retail customers. Brooklyn Union strongly supports this proposal. The availability of such services to qualifying CFs will eliminate significant impediments to the efficient operation of cogenerators, insure that new CFs can be in-

stalled without costly redundant equipment and maximize the benefits of interconnection between qualifying cogenerators and electric utility systems. With respect to supplementary power, Brooklyn Union understands that a potential qualifying CF could install cogeneration equipment capable of producing something less than all of its electric power requirements and purchase additional electric power from an electric utility under the applicable rate schedule for that customer's class. Such service should give a CF a wider choice in the purchase or design of cogeneration equipment, so that the overall mix of electricity and steam or other forms of useful energy produced can be more closely tailored to the particular needs of that facility. This in turn will help the qualifying CF to achieve the maximum fuel use efficiency, and with a minimum commitment of resources.

CONCLUSION

The Brooklyn Union Gas Company respectfully requests that the foregoing comments and those previously filed herein on August 1979 be taken into account by the Commission in developing rules in these proceedings.

Respectfully submitted,

The Brooklyn Union Gas Company

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Its Attorneys

Dated: December 14, 1979

VERIFICATION

STATE OF NEW YORK)
: ss.:
COUNTY OF KINGS)

Michael W. Hall, being duly sworn, deposes and says: that he is an attorney for The Brooklyn Union Gas Company; that he is authorized to verify and file the foregoing document; that he has examined the statements contained therein and that all such statements are true and correct to the best of his knowledge, information and belief.

Sworn to before me this
14th day of December, 1979

ROSELLEEN T. HORN
Notary Public, State of New York
No. 24-4683250
Qualified in Kings County
Commission Expires March 30, 1981

COGENERATION IN THE BROOKLYN UNION GAS COMPANY SERVICE AREA

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May, 1979

COGENERATION IN THE BROOKLYN UNION GAS COMPANY SERVICE AREA

Introduction

This paper presents information gathered on eight cogeneration facilities currently operating in the Brooklyn Union Gas Company service area. Data were obtained through site visits to each of the eight facilities and discussions with plant engineers and plant managers. This data supplements information already on file at Brooklyn Union Gas Company.

The data were analyzed primarily to:

1. document the operating history of the eight plants;
2. identify the environmental impacts of cogeneration in the New York City area; and
3. determine the economics of cogeneration in the New York City area.

The conclusions presented represent best engineering estimates of the plant's operation, backed up whenever possible with documented data. A detailed case study of one of the eight plants was completed in October, 1977*, and the conclusions presented therein generally agree with, and therefore reinforce, the information gathered on all the facilities.

General Description of the Facilities

The eight facilities surveyed are: (1) Rochdale Village in Jamaica, Queens; (2) Amalgamated Warbasse Houses in Brooklyn; (3) Starrett City in Brooklyn; (4) Kings Plaza Shopping Center in Brooklyn; (5) New York Telephone Company at 111 Livington Street in Brooklyn; (6) Revere Sugar Corporation in Brooklyn; (7) Amstar Sugar Refinery in Brooklyn; and (8) Procter and Gamble in Staten Island. These eight facilities represent a variety of operating conditions in terms of facility type, size, age, and energy re-

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*"Case Study of Total Energy at Rochdale Village", Vol. I and II, submitted to Argonne National Laboratory by Brooklyn Union Gas Company, October 28, 1977.

quirements. Three are large residential developments (Rochdale Village, Warbasse Houses, and Starrett City); two are commercial/office complexes (Kings Plaza and New York Telephone); and three are industrial plants (Revere Sugar, Amstar Sugar, and Procter and Gamble).

The types of facilities and equipment cover a spectrum of applications including a range of sizes, fuel availabilities and energy demands. The three apartment complexes use a combination of steam turbine generators and dual-fuel diesel engine generators to produce electricity and steam. The two commercial/office complexes use only dual-fuel diesel engine generators, while two of the three industrial plants (Revere Sugar and Amstar Sugar) use only steam turbine generators due to high process steam demands. The remaining industrial plant (Proctor and Gamble) uses a steam turbine and dual-fuel diesel generator combination.

These facilities range in age from 5 to 89 years. The installed electrical capacity of these energy systems varies from 2,500 kw to 18,000 kw. All but one (Revere Sugar) provide 100 percent of the electricity required on-site and have more than sufficient back-up capacity to supply the peak electrical demand. Of the eight facilities, only Revere Sugar is hooked up to the Consolidated Edison electrical grid. Moreover, this connection is not in parallel. Only certain isolated loads are carried on Con Edison's grid.

Seven of the eight facilities use natural gas as their primary fuel, supplied on an interruptible basis by Brooklyn Union, and #2 or #6 oil as a secondary fuel. For the foreseeable future, gas will be available to these facilities for 10 out of 12 months per year. New York Telephone Company currently uses only oil.

The following sections discuss, in greater detail, system performance, environmental impacts, and the economics of cogeneration at these eight cogeneration facilities.

System Operations

System Performance. Plant managers and operators at the eight cogeneration facilities expressed a high level of satisfaction with the performance of their facilities. Rea-

sons cited for this satisfaction include (1) high equipment reliability; (2) very low frequency and duration of system outages; and (3) minimal equipment maintenance and repair problems.

The frequency of system outages at four of the facilities has been much less than one per year. This group of sites includes the three residential complexes and Kings Plaza Shopping Center. Rochdale Village, which has been in operation for 14 years, has had no complete loss of power and has never had to use its emergency generation equipment.

At the remaining four sites, including the three industrial complexes and one office building, the frequency of major outages has been on the order of only once per year. The higher frequency of outages in this group of facilities, as compared to the others, can be attributed to more severe operating conditions. The equipment in these facilities is operated at peak rates for longer periods of time, and the frequency of scheduled downtime for maintenance is much lower. This is particularly true in the industrial facilities which tend to include less back-up capacity in their system design.

The duration of the "worst-case" system outages for these facilities ranged from 30 minutes to 10 hours. The average duration of a major system outage was estimated by most plant managers to be in the order of 1-4 hours. In only one instance did an outage of more than 30 minutes result in total blackout of power and heat. This occurred during the fall of 1973 at Kings Plaza Shopping Center when, during a hurricane, water infiltrated to the motor control equipment and caused the system to short out. Total down time was one hour and 15 minutes. In other cases, emergency equipment came on line with a minimum of service disruption.

Maintenance. The plant managers and engineers at each of the eight facilities emphasized the importance of an effective preventive maintenance program and monitoring of equipment performance. All facilities are equipped to do a substantial amount of maintenance in-house, and most perform equipment checks on a regular basis.

Operation of the maintenance programs at these facilities has been handled by a group of engineering, mechanic and operatoring personnel. Minor repairs and servicing are provided as required. Overhauls of major equipment are scheduled on a regular basis. The manufacturers of the equipment will generally make recommendations for maintaining the equipment, from which an organized maintenance program can be devised.

The maintenance programs at Revere Sugar and Starrett City demonstrate the range in programs at the eight facilities. At Revere Sugar, minimal maintenance is required under normal operation. Minor equipment runs basically until it fails, then spares are brought on line and repairs are made. Major equipment is taken off line and checked approximately every two years.

Starrett City has an in-house operating and maintenance staff of 33 people who work in 5 rotating groups, 24 hours/day, 7 days/week. Spring and fall maintenance is performed on the heavy equipment. Boiler inspections occur twice per year. It is important to note that the Starrett City cogeneration plant runs continuously 24 hours a day to furnish the site's 6000 dwelling units with all electrical, heating, and air conditioning requirements on a year round basis.

The importance of preventive maintenance is emphasized by the experience of New York Telephone. At this facility, equipment performance is not as good as desired. Poor preventive maintenance by the previous system operator has been identified as the probable cause of the present problems.

Balance of Thermal and Electrical Load. To obtain optimum total system efficiency, the thermal and electrical demands on the system should be balanced so that waste heat captured during the generation of electricity is sufficient to satisfy all heating, air conditioning, and/or process requirements without substantial discharge of heat to the atmosphere and without need for supplemental steam generation. Unfortunately, few individual sites can precisely balance their thermal and electric demands.

TABLE 1

ELECTRICAL AND THERMAL LOADS OF COGENERATION SYSTEMS

FACILITY	AGE (YEARS)	EQUIPMENT USED	ELECTRICITY: INSTALLED CAPACITY (kw)	ELECTRICITY: PEAK OPERATING DEMAND** (kw)	ARE ALL ENERGY NEEDS MET BY OPERATION OF ELECTRICAL GENERATION EQUIPMENT? ELECTRICITY	STEAM	IS STEAM WASTED?
Rochdale Village	16	steam turbines diesel engines (dual fuel)	18000	9800	Yes	Yes	No
Amstar Sugar	89	steam turbines	9500	6000	Yes	No turbine bypass used	No
Kings Plaza	9	diesel engines (dual fuel)	11000	7500	Yes	No additional boiler used	No
Warbasse Houses	15	steam turbines diesel engines	12500	4200	Yes	No turbine bypass used	No
Revere Sugar	45	steam turbines	2500	5000	No utility tie-in used	No	No
Starrett City	5	steam turbines diesel engines (dual fuel)	18000	11200	Yes	Yes	Yes
New York Telephone Company	10	diesel engines (dual fuel)	5000	2100	Yes	No additional boiler used	No
Proctor and Gamble	9*	steam turbines diesel engines	14500	8000	Yes	Yes	No

NOTES:
* Conversion began in 1970 and was completed in 1974.
** Estimates obtained from facilities personnel.

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Nevertheless, near optimum total system efficiencies can still be achieved when thermal demand exceeds electrical demand, since supplemental steam can be generated at greater than 80 percent efficiency. In this case, the cogeneration system is sized to meet peak electrical demand and supplemental steam is generated on-site.

The least efficient situation exists when heat must be wasted because electrical demand exceeds thermal demand. This situation can be remedied somewhat if hook-ups to the local utility are available and supplemental electricity can be purchased at a reasonable rate.*

Table 1 displays the electrical generation characteristics and the thermal/electrical load balance of the eight facilities. Rochdale Village and Procter and Gamble have a near optimum balance of thermal and electrical load. All electrical and thermal needs are met by operation of the cogeneration equipment, and little energy is wasted. Thermal demand exceeds electrical demand at five of the facilities, American Sugar, Kings Plaza, Warbasse Houses, New York Telephone, and Revere Sugar. The first four of these generate all required electricity on-site and supplement the thermal load with either turbine bypasses or additional boilers. Revere Sugar currently generates only 50 percent of its electrical requirements and purchases the remainder from Consolidated Edison, to power certain isolated loads.

At only one of the eight facilities, Starrett City, did steam generation from waste heat actually exceed current thermal requirements. The excess is not great and plans to supply thermal energy to a neighboring facility are currently being investigated.

An overall analysis of the thermal/electrical load balance characteristics of the eight facilities studied indicates that relatively little thermal energy is wasted.

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*If the cogenerator connects to an electrical utility grid and is allowed to sell as well as purchase electricity, optimum fuel savings and other benefits accrue to the generator, even though total system efficiency will decrease.

Standby Capacity vs. Utility Tie-Ins. As is evident in Table 1, all of the eight facilities, except Revere Sugar, were designed to have substantial amounts of standby electrical generation capacity. The standby equipment is essential to enhance system reliability, to insure coverage during equipment breakdowns, and to permit the periodic shutdown of equipment for maintenance. An autonomous cogeneration plant (one not connected to the local electric utility grid) must be oversized in order to meet its peak electrical demand even with some equipment failure.

A grid-connected cogenerator does not require standby electrical generation capacity, and thus will incur lower capital costs than an autonomous plant. Optimum fuel savings and other benefits accrue to the grid-connected cogenerator that is allowed to sell as well as buy electricity. Unfortunately, at the time they were designed and constructed, most of these eight facilities encountered a high degree of resistance from the local electric utility to a grid-connection. Due primarily to the excellent performance histories of their energy systems, and the high hookup and standby rates for purchased electricity, the plant managers of the seven autonomous facilities are presently content to remain independent.

Should reasonable rates for an electrical grid tie-in become available in the future* new cogeneration facilities could be sized with less standby electrical generating capacity or they could sell excess power back to the utility. This will greatly reduce capital costs and make the systems even more economically attractive. Existing facilities could tie-in and operate on utility power during periods of low demand or during emergencies and, if two way electrical transfers were available, sell electricity to the local utility when excess power is available. Even so, several plant managers at the eight facilities prefer to remain totally independent of the electric utility grid and its inherent problems.

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*"reasonable" tie-in rates for cogenerators are mandated in the National Energy Act.

Environmental Impact

Burning fuel can have a number of environmental impacts, including emission of combustion products to the air, discharges to the water, noise, and production of solid waste. The major potential environmental impact of cogeneration facilities, however, is the impact on air quality.

Since a cogeneration fcility operates more efficiently and burns less fuel than would be used in the separate generation of thermal and electrical energy, total emission of combustion products (CO, SOx, NOx, particulates, and photochemical oxidants) to the air can be reduced roughly in proportion to the fuel savings.** However, the cogenerator burns more fuel on-site than he would if he were providing heat only; and (2) the cogenerators may use a different technology or a different fuel than the boilers which are typically used for producing heat and generating electricity. Therefore, site specific calculations will be required to assure that environmental criteria are satisfied before deciding on cogeneration.

In New York City, gas is often the primary fuel for cogenerators. Due to the clean-burning nature of natural gas, the local air quality impacts of increased gas-fired cogeneration are minimized. The overall regional air quality impacts of increased gas-fired cogeneration are likely to be favorable since cogeneration will supplant primarily oil-fired generation of electricity at central power plants.

No environmental problems have been associated with the operation of the eight cogeneration facilities surveyed. The facilities easily obtained the required air emissions permits and have been operating in compliance with applicable air quality regulations.

All of these facilities are dual-fuel (gas and oil), and gas is the primary fuel at all but one, New York Telephone Company. Boiler and diesel operations are much cleaner and more easily controlled when gas is burned. Therefore, air

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**The air quality impacts of cogeneration are discussed in greater detail in "The Environmental Impact of On-Site Cogeneration," Fred C. Hart Associates, Inc., May, 1979.

quality impacts are minimized. For the foreseeable future, gas will be available to these facilities for 10 months of the year.

In addition, the majority of these facilities monitor the operation of their boilers and engines to insure high-efficiency operation. Smoke detectors are widely used during oil firing of burners and engines to identify the opacity of the plume. High opacity indicates the presence of particulates and soot in the plume resulting from incomplete combustion of the fuel. Temperature controls and monitors are also used to determine combustion efficiency in both gas- and oil-fired systems. A low operating temperature results in incomplete combustion. A high operating temperature results in burning more fuel than necessary, increasing all pollutant emissions, particularly NOx. These mesures and others (e.g., excess oxygen controls) are taken to maximize combustion efficiency, which in turn minimizes air quality impacts.

Potentially objectional emissions (primarily from a visual standpoint) may occur during start-up and soot blowing of oil-fired boilers and engines. However, such short-term emissions are permitted under current environmental regulations.

Economic Impact

Nearly all cogeneration units are installed with the expectation of dollar savings or profit. The dollar savings derive from the ability of cogeneration to create electricity on-site at a lower cost than purchased electricity. The lower cost of cogenerated electricity is due primarily to such factors as lower transmission costs and waste heat utilization, which result in higher system efficiencies than are obtainable at central power stations. Studies made in Europe and the United States all highlight the fact that cogeneration reduces electric bills by 40 to 60 percent.*

The economics are particularly advantageous in New York City due to the high cost of purchased electricity in

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*Louis M. Denis, "Cogeneration's Future: More Energy At Less Cost," *Energy User News*, Monday, November 27, 1978.

the region. Federal Energy Regulatory Commission data for 1978 estimate the rate for a typical industrial user in New York City at 7.2¢/kwh.**

Since electric power rates vary according to a number of factors including type of facility, peak demand, total demand, and load factor, some customers will pay slightly lower rates and others slightly higher rates than the 7.2¢/kwh average. Data indicate that the local electric power rates charged to large industrial, commercial and residential customers will range from approximately 6.4¢/kwh to 8.0¢/kwh.

Table 2 compares the cost of purchased electricity in New York City to cogenerated electricity at the eight cogeneration facilities and shows an estimated range of dollar savings per year based on these figures. The six facilities for which annual dollar savings estimates could be derived show annual savings of from $30,000 to $1,800,000. It should be noted that the highest annual savings estimated, the $1,800,000 at Rochdale Village, was derived from a detailed study of system operations and probably represents the most reliable estimate in Table 2. These figures are consistent with the 25-33 percent reduction in energy bills experienced by other New York City buildings which have retrofit cogeneration equipment.*

Conclusions

The results of the survey of eight cogeneration facilities in the Brooklyn Union Gas Company service area indicate that cogeneration does have a long and successful history of operation in the local area and is a viable option for a variety of facilities, including apartment complexes, shopping centers, office buildings, and industrial plants. The following conclusions can be drawn from the operating experience of the eight facilities in the area:

**This typical industrial user is one who consumes 200,000 kwh per month with a peak use of 500 kw.

*Ronald Smothers, "Private Businesses Turn to Making Their Own Energy", *Sunday New York Times*, April 15, 1979, p. A1.

1. *equipment operations have proved to be highly reliable over the 5-89 years the eight facilities have been in existence;*
2. *the frequency and duration of system outages is extremely low, particularly at the three apartment complexes and one commercial complex;*
3. *no environmental problems associated with the operation of the power plants have been encountered; and*
4. *the savings in dollars and fuel consumed (compared to purchasing electricity from the local utility and generating heat on-site) are substantial.*

In summation, th cogenerating power systems surveyed have a highly successful operating history, create no environmental problems and provide substantial economic benefits. These conclusions indicate that a large number of facilities in the New York City area could derive similar benefits. Recent trends toward (1) higher prices for purchased electricity, (2) greater availability of natural gas, (3) the enactment of legislative inducements such as tax credits, and (4) the establishment of reasonable rates for electric utility hook-up (as mandated by the National Energy Act) combine to further enhance the cogeneration option in New York City.

Supreme Court of the United States

No. 82-34

AMERICAN PAPER INSTITUTE, INC.,
PETITIONER,

v.

AMERICAN ELECTRIC POWER SERVICE CORPORATION, ET AL.

ORDER ALLOWING CERTIORARI. Filed October 12, 1982.

The petition herein for a writ of certiorari to the United States Court of Appeals for the District of Columbia Circuit is granted. The case is consolidated with case No. 82-226, *Federal Energy Regulatory Commission* v. *American Electric Power Service Corporation, et al.*, and a total of one hour is allotted for oral argument. Justice O'Connor took no part in the consideration or decision of this petition.

Supreme Court of the United States

No. 82-226

FEDERAL ENERGY REGULATORY COMMISSION, PETITIONER,

v.

AMERICAN ELECTRIC POWER SERVICE CORPORATION, ET AL.

ORDER ALLOWING CERTIORARI. Filed October 12, 1982.

The petition herein for a writ of certiorari to the United States Court of Appeals for the District of Columbia Circuit is granted. The case is consolidated with case No. 82-34, *American Paper Institute, Inc.* v. *American Electric Power Service Corporation, et al.*, and a total of one hour is allotted for oral argument. Justice O'Connor took no part in the consideration or decision of this petition.